REGULAR MEETING
CITY OF ROSWELL COUNCIL - AGENDA
THURSDAY, SEPTEMBER 8, 2016
Roswell Museum and Art Center
Bassett Auditorium - 100 W. 11th Street
Roswell, New Mexico 88201

Notice of this meeting has been given to the public in compliance with Sections 10-15-1 through 10-15-4 NMSA 1978 and Resolution No. 15-56. Except for emergency matters, the City Council shall take action only on the specific items listed on the Agenda.

SEPTEMBER 8, 2016 6:00 p.m.

MAYOR - Dennis J. Kintigh

Ward 1	Ward II	Ward III	Ward IV	Ward V
Juan Oropesa	Steve Henderson	Art Sandoval	Jason Perry	Barry Foster
Natasha Mackey	Caleb T. Grant	Jeanine Best	Savino Sanchez Jr.	Tabitha D. Denny

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WELCOME! We are very glad you have joined us for the Roswell City Council meeting. If you wish to speak, please sign up at the podium prior to 6:00 p.m. All matters listed under Consent Items/Consent Agenda are considered routine by the City Council and will be approved by one motion. There will be no separate discussion on these items. If two members of the council desire to discuss the matter, that item will be removed from the consent agenda and will be considered separately. Any item approved as part of the consent agenda is not an agenda item for the purpose of public participation. The Council is pleased to hear relevant comments; however, a 3-minute limit is set in accordance with Resolution 15-56. Large groups are asked to name a spokesperson. Robert's Rules of Order govern the conduct of the meeting. "THANK YOU" for participating in your City Government.

OPENING CEREMONIES

Call to Order by Presiding Officer
Roll Call & Determination of Quorum
Pledge of Allegiance to the Flag and Invocation
Agenda/Consent Items/Minutes from the August 11, 2016 Regular City Council meeting.

1. Approval of agenda - Consider approval of the agenda for the Regular City Council meeting for September 8, 2016.

PUBLIC PARTICIPATION ON AGENDA ITEMS

In order to speak you must sign up prior to the Council Meeting.

CONSENT ITEMS

Bids and RFP's

2. Bid - Slurry Seal Program Fall 2016 - Consider award of the “Slurry Seal Program – Fall 2016” to IPR, Ltd. of Albuquerque, NM in the amount of $380,698.77.(Najar)

3. Bid - Grappler truck purchase - Consider the purchase of one (1) new grappler truck utilizing New Mexico Cooperative Education Services (CES) Statewide Price Agreement 16-019B-C101- all, at a cost of $150,242.42 from Robert's Truck Center of New Mexico dba Summit Truck Group. (Najar)

4. RFP – 16-011 - Consider approval of RFP – 16-011 to move forward with negotiations, cost analysis and contract terms for finalization to award a contract to South Eastern New Mexico Tree Service to maintain the South Main Street medians, Reischman Park and Roswell International Air Center (RIAC) Park. (Williams)

5. ITB-17-004 - Automated Fuel Dispensing Service - Consider award of ITB-17-004 Automated Fuel Dispensing Service to AWC Propane Inc. for a one (1) year contract period from October 1, 2016 to September 30, 2017 with three (3) additional 12 month period mutually agreeable extensions. (Najar)

6. ITB-17-005 Park Road Project - Consider award of ITB-17-005, Park Road Project to Constructors Inc. in the amount of $134,119.15, which includes gross receipts tax. (Najar)

RIAC Leases

7. Consider approval to authorize Mistic, Inc., a New Mexico Corporation, to amend their current lease agreement to allow the return of certain parts of the leasehold to landlord and a reduction of rent. (Scott Stark)

Resolution(s)

8. Resolution 16-62 - The Resolution shall mandate the cleanup of approximately forty-eight (48) separate properties within the City.(Mathews)

9. Resolution 16-63 - The Resolution shall require the removal or demolition of six (6) dilapidated structures. (Mathews)

Minutes

10. Consider approval of the minutes from the August 11, 2016 Regular City Council meeting. (Coll)

NEW BUSINESS / REGULAR ITEMS

Resolution(s)

11. Resolution 16-57 - Consider the approval of Resolution 16-57 supporting the development of a concept plan for a new Game & Fish Department facility which may be constructed within the Old Municipal Airport. (Best/Morris)

12. Resolution 16-64 - Consider approval of Resolution 16-64 requesting a deadline change to the Department of Finance Authority (DFA) for the final budget for the City of Roswell and for all New Mexico Municipalities. (Grant/Henderson/Garcia)

13. Resolution 16-65 - Consider approval of Resolution 16-65 which allows the United States Army Donations Program to donate a UH – 1H Huey Helicopter shell to the Douglas McBride Veterans Cemetery. (Denny/Tim Williams)

Request(s)

14. RFP 16-010 - Consider approval of RFP 16-010 for staff to move forward with negotiations, cost analysis and contract terms for finalization to award a contract to Kemper Sports Management to operate and maintain the Nancy Lopez Golf Course at Spring River. (Denny/Tim Williams)

15. Proposed Ordinance 16-18 Affordable Housing Plan – Consider approval to advertise for a public hearing to be held at the Regular City Council meeting on October 13, 2016. (Best/Morris)

16. Smart Meter Water Project - Consider approval of the Investment Grade Audit for the Smart Water Meter Project as presented and instruct staff to proceed to the next phase of the project development. (Best/Najar)

17. Appointments - Consider appointments to the Labor Management Relations Board, the Roswell Museum and Art Center, and the Chaves County Joy Center as presented by Mayor Kintigh. (Sanchez/Mayor Kintigh)

18. Interim City Manager - Council consideration and vote to consider the Mayor's recommendation of James R. Hogan as Interim City Manager. (Sanchez/Mayor Kintigh)

CLOSED SESSION

19. Closed Session - Pursuant to NMSA 1978 § 10-15-1(H)(7), to discuss attorney-client privilege pertaining to threatened or pending litigation referencing the Chaves County Grand Jury which the City of Roswell is or may become a participant.(Sanchez/Mayor Kintigh)

DEPARTMENT REPORTS

20. Department reports:
    - GRT
    - Roswell Public Library
    - Code Enforcement
    - Fire
    - Convention Center
        - Activity Report
        - Expense Report
        - Maintenance Report
        - Visitors Bureau
    - Lodgers Tax
    - Convention Ctr Room Fee
    - Parks and Recreation

PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

In order to speak you must sign up prior to the Council Meeting.

Adjournment

If you are an individual with a disability who is in need of a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, please contact Human Resources at 575-624-6700 at least one week prior to the meeting or as soon as possible. Public documents including the agenda and minutes can be provided in various accessible formats. Please contact the City Clerk at 575-624-6700 if a summary of other type of accessible format is needed.

Printed and posted: Friday, September 2, 2016

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 1.**
Meeting Date: 09/08/2016
COMMITTEE: N/A
CONTACT: Sharon Coll **CHAIR:** N/A

ACTION REQUESTED:
Approval of agenda - Consider approval of the agenda for the Regular City Council meeting for September 8, 2016.

BACKGROUND:
Approval of the agenda for the Regular City Council meeting for September 8, 2016.

FINANCIAL CONSIDERATION
Not applicable.

LEGAL REVIEW:
Not applicable.

BOARD AND COMMITTEE ACTION:
Not applicable.

STAFF RECOMMENDATION:
Consider approval of the agenda for the Regular City Council meeting for September 8, 2016.

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 2.**
Meeting Date: 09/08/2016
COMMITTEE: Infrastructure
CONTACT: Louis Najar **CHAIR:** Jeanine Corn-Best

ACTION REQUESTED:

Bid - Slurry Seal Program Fall 2016 - Consider award of the “Slurry Seal Program – Fall 2016” to IPR, Ltd. of Albuquerque, NM in the amount of $380,698.77.(Najar)

BACKGROUND:

The City of Roswell has approximately 364 miles of streets.

One of the common pavement maintenance tasks performed is “slurry seal”. Slurry seal is an emulsified asphalt surface treatment. It is a fine aggregate mixed with asphalt emulsion and is applied to the street approximately 5/8” thick.

The City utilizes Statewide Price Agreements to procure a contractor. Utilizing current Statewide Price Agreement #61-805-15-13859, it is recommended that IPR, LTD be awarded the work in the amount of $380,698.77.

This year’s program includes streets which have been “crack sealed” and need the “slurry seal” to compliment the crack sealing. Other streets are based on critical need as deemed by Streets Department Superintendent. These streets were originally planned for Spring 2016, but were cut as part of budget trimming.

FINANCIAL CONSIDERATION

This is budgeted out of the FY 2017 Road Fund.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

The Infrastructure Committee recommended approval (4-0) at their meeting on August 15, 2016.

STAFF RECOMMENDATION:

Consider award of the “Slurry Seal Program – Fall 2016” to IPR, Ltd. of Albuquerque, NM in the amount of $380,698.77.

Attachments

ATT 1 Slurry IPR Quote
ATT 2 Slurry Contract Excerpts
ATT 3 Slurry Street List

3740 Hawkins NE, #B
Albuquerque, NM 87109
505-292-3331
LICENSE NO. 32390

PROPOSAL - CONTRACT

Quinn Miller
City of Roswell
Drawer 3
Roswell NM

DATE: 08/08/2016
SELLER: Quinn Miller
PROJECT:
DESCRIPTION: 2016, CITY OF ROSWELL FALL
EST NO: 782336

Using New Mexico DOT Price Agreement #61-805-15-13859

Resurface approximately 153,035.31 SQ. YD. of Type II Polymer Modified Slurry Resurfacer. Approximate thickness is 3/8".

Item #0001, Mobilization $9.00. = $14,400.00
Item #0018, Type II 40,000 plus square yards, $2.26. = $336,677.68
Item #0005, Surface Preparation $.02. = $3,060.71

SUBTOTAL = $354,138.39
TAX = 7.5% = $26,560.38

TOTAL = $380,698.77

STREETS, E. Byrne St, Hunsicker Pl, Alden Pl, B St, Luebke Pl, Fitzgerald, Langley Pl, A St, Will Pl, Weiss Pl, Vaughn Pl, Bailey Pl, Zettle Pl, W Eyman St, Walker Pl, Walker Pl (circle), B St, Kelly Pl, Holloman Pl, Langley Pl, A St, W Wells, Billy Mitchell Pl, Geiger Pl, Andrews Pl, Sierra Blanca, N Diamond A, Latigo Ln., Latigo cir., Circle Diamond, Anna J, Desert Rose, Desert Springs, Park Pl (E), Park Pl (W), Pecan Dr, E Greenwood Ave, N Greenwood Ave, Grove St, Peach St, Eldora Dr, N Greenwood Ave, N Beech Ave, N Orchard Ave, N Orchard Ave, E Orange St, E Cherry St, Norris Dr, Purdy Dr, N Edgewood Ave, E Cherry St, N Edgewood Ave, E Spring St, E Orange St, E Apple St, E Pear St, E Pear St, N Beech Ave, N Greenwood Ave, Apple Ln, Eldora Dr, E Morningside Dr, 6th St, 5th St , N Greenwood Ave, E Plum St, Elm St, N Mulberry Ave, Howard Dr, 3rd St, 4th St, 5th St , 6th St, 7th St , 8th St, N Shartell Ave, N Grand Ave

$380,698.77

Three Hundred Eighty Thousand, Six Hundred Ninety Eight Dollars and Seventy — TAX INCLUDED

Payment shall be due upon completion of work.

If a Subcontract is written based upon this Proposal, this Proposal shall be attached to and made part of the Subcontract.

BUYER'S ACCEPTANCE

Date of Acceptance:

Signature:

CONTRACTOR'S ACCEPTANCE
Proposal Date: **08/08/2016**

IPR, Ltd.

By: Mike Daniels

This proposal may be withdrawn if not accepted after the following 30 days:

SIGN AND RETURN THIS COPY IF CHECKED: [ ]

GSD/PD (Rev. 5/16/12)

State of New Mexico
General Services Department

Price Agreement

Awarded Vendor:
2 Vendors (see page 7)

Telephone No.:

Price Agreement Number: **61-805-15-13859**

Payment Terms: **Net 30**

F.O.B.: **Destination**

Delivery: **As Requested**

Ship To:
New Mexico Department of Transportation
Various Locations

Invoice:
New Mexico Department of Transportation
Various Locations

For questions regarding this contract please contact:
Angela Martinez 505-827-5127

Procurement Specialist: **Eric Sanchez**

Telephone No.: **505-827-0554**

Title: **Slurry Seal**

Term: **April 11, 2016-April 10, 2017**

This Price Agreement is made subject to the "terms and conditions" shown on the reverse side of this page, and as indicated in this Price Agreement.

Accepted for the State of New Mexico

New Mexico State Purchasing Agent

Date: **4/5/16**

LM;es

Awarded Vendors:

(AA) 0000073074
Blue Collar Construction, LLC
PO Box 23182
Albuquerque, NM 87192
505-294-2202

(AB) 0000045183
IPR, LTD
3740 Hawkins
Albuquerque, NM 87109
505-292-3331

2016 Spring Slurry Project

STREET	FROM	TO	WIDTH	LENGTH	TOTAL	SY
E. Byrne St	University Blvc	A St	28	2295.44	64272.32	7141.37
Hunsicker Pl	E Byrne St	Cul-De-Sac	28	307.90	8621.20	957.91
Alden Pl	E Byrne St	Cul-De-Sac	28	308.00	8624.00	958.22
B St	E Byrne St	W Eyman St	28	523.00	14644.00	1627.11
B St	ł St (Cul-De-Sac	B St X2	20	517.00	10340.00	1148.89
Luebke Pl	E Byrne St	Cul-De-Sac	28	305.00	8540.00	948.89
Fitzgerald	E Byrne St	Cul-De-Sac	28	305.00	8540.00	948.89
Langley Pl	E Byrne St	W Eyman St	28	522.00	14616.00	1624.00
A St	E Byrne St	W Eyman St	28	522.00	14616.00	1624.00
Will Pl	W Eyman St	W Eyman St	20	232.21	4644.20	516.02
Weiss Pl	W Eyman St	W Eyman St	20	236.00	4720.00	524.44
Vaughn Pl	W Eyman St	W Eyman St	20	231.00	4620.00	513.33
Bailey Pl	W Eyman St	W Eyman St	20	231.00	4620.00	513.33
Zettle Pl	University Blvc	University Blvc	20	231.00	4620.00	513.33
W Eyman St	University Blvc	A St	28	2298.00	64344.00	7149.33
Walker Pl	University Blvc	University Blvc	28	945.50	26474.00	2941.56
Walker Pl (circle	Walker Pl	Walker Pl	38	631.50	23997.00	2666.33
B St	W Eyman St	W Wells	28	820.66	22978.48	2553.16
Kelly Pl	W Eyman St	Cul-De-Sac	28	545.00	15260.00	1695.56
Holloman Pl	W Eyman St	Cul-De-Sac	28	545.00	15260.00	1695.56
Langley Pl	W Eyman St	Cul-De-Sac	28	545.00	15260.00	1695.56
A St	W Eyman St	W Wells	28	820.00	22960.00	2551.11
W Wells	University Blvc	A St	28	2326.00	65128.00	7236.44
Billy Mitchell P	W Wells	W Wells	20	312.00	6240.00	693.33
Geiger Pl	W Wells	W Wells	20	312.00	6240.00	693.33
Andrews Pl	W Wells	W Wells	20	312.00	6240.00	693.33
					Total SQYD	51824.36

Slurry Cost	##########
w/tax	$8,395.55
Sub Total	##########

Sierra Blanca	N Montana	ey W Diamonc	27	604	16308.00	1812.00
N Diamond A	W Mescalero	Latigo Ln.	27	2026	54702.00	6078.00
Latigo Ln.	Diamond A	CS	27	920	24840.00	2760.00
Latigo cir.	Latigo Ln.	CS	33	206	6798.00	755.33
Circle Diamonc	Latigo Ln.	Dead End	29	1035	30015.00	3335.00
Anna J	W Mescalero	N Montana	29	723	20967.00	2329.67
Desert Rose	W Mescalero	CS	31	288	8928.00	992.00
Desert Springs	W Mescalero	CS	29	248	7192.00	799.11
					Total SQYD	18861.11

Slurry Cost	$40,740.00
w/tax	$3,055.50

Sub Total $43,795.50

STREET	FROM	TO	WIDTH	LENGTH	TOTAL	SY
Park Pl (E)	Pecan Pl	Cul-De-Sac	26	269.55	7035.26	781.70
Park Pl (W)	Pecan Pl	Cul-De-Sac	28	230.04	6441.12	715.68
Pecan Dr	Peach St	Dead End	28	966.29	27056.12	3006.24
E Greenwood A	N Orchard Ave	Grove St	25	725.7	18142.50	2015.83
N Greenwood A	Grove St	Peach St	25	253	6325.00	702.78
Grove St	N Orchard Ave	Greenwood A	25	503.28	12582.00	1398.00
Peach St	N Orchard Ave	N Atkinson Ave	25	1281	32025.00	3558.33
Eldora Dr	Peach St	E Cherry St	27	635.2	17150.40	1905.60
N Greenwood A	Peach St	E Cherry St	25	634.51	15862.75	1762.53
N Beech Ave	Peach St	E Cherry St	25	634.79	15869.75	1763.31
N Orchard Ave	E Cherry St	Peach St	25	649.62	16240.50	1804.50
N Orchard Ave	Peach St	Dead End	25	642.11	16052.75	1783.64
E Orange St	Edgewood Av	N Orchard Ave	28	950	26600.00	2955.56
E Cherry St	N Orchard Ave	Edgewood Av	27	894.22	24143.94	2682.66
Norris Dr	E Orange St	Cul-De-Sac	27	218.14	5889.78	959.53
Purdy Dr	E Orange St	Cul-De-Sac	27	221.91	5991.57	959.53
N Edgewood Av	E Orange St	Cul-De-Sac	28	217.4	6087.20	962.44
N Edgewood Av	E Orange St	E Cherry St	28	323.43	9056.04	1006.23
E Cherry St	N Garden Ave	Edgewood Av	27	323.43	8732.61	970.29
E Cherry St	N Orchard Ave	N Atkinson Ave	27	1292.06	34885.62	3876.18
N Edgewood Av	E Cherry St	E Apple St	27	305.12	8238.24	915.36
E Spring St	Greenwood A	Dead End	24	275.54	6612.96	734.77
E Orange St	Greenwood A	Dead End	24	275.54	6612.96	734.77
E Apple St	Edgewood Av	N Orchard Ave	28	971.83	27211.24	3023.47
E Pear St	N Garden	N Orchard Ave	27	1272.91	34368.57	3818.73
E Pear St	N Orchard Ave	N Atkinson Ave	27	1302.88	35177.76	3908.64
N Beech Ave	E Cherry St	E Pear St	27	635.7	17163.90	1907.10
N Greenwood A	E Cherry St	E Pear St	26	636.26	16542.76	1838.08
Apple Ln	Greenwood A	Cul-De-Sac	26	173.95	4522.70	790.69
Eldora Dr	E Cherry St	E Pear St	27	635.46	17157.42	1906.38
E Morningside D	N Atkinson Ave	N Orchard Ave	27	1305.24	35241.48	3915.72
6th St	N Orchard Ave	N Garden	27	1273.71	34390.17	3821.13
5th St	N Garden	N Atkinson Ave	27	2593.85	70033.95	7781.55
N Greenwood A	E 5th St	E Plum St	20	600	12000.00	1333.33
E Plum St	Greenwood A	N Orchard Ave	20	974	19480.00	2164.44
E Plum St	N Orchard Ave	N Garden	20	1258	25160.00	2795.56
Elm St	E 5th St	E Plum St	27	605.52	16349.04	1816.56
N Mulberry Av	E 5th St	E Plum St	27	583	15741.00	1749.00
Howard Dr	E 5th St	E Plum St	27	608	16416.00	1824.00
3rd St	N Grand Ave	N Garden	28	1332.16	37300.48	4144.50
4th St	N Grand Ave	N Garden	28	1334	37352.00	4150.22
5th St	N Grand Ave	N Garden	28	1334.5	37366.00	4151.78

6th St	N Grand Ave	N Garden	28	1336	37408.00	4156.44
7th St	N Grand Ave	N Garden	28	1336	37408.00	4156.44
8th St	N Grand Ave	N Garden	28	1358	38024.00	4224.89
N Shartell Ave	2nd St	5th St	24	1218	29232.00	3248.00
N Grand Ave	2nd St	8th St	24	2439	58536.00	6504.00
					Total SQYD	82349.84

Slurry Cost	$177,875.64
w/tax	$13,340.67
Total	##########

Total Cost Estim ##########

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 3.**
Meeting Date: 09/08/2016
COMMITTEE: Infrastructure
CONTACT: Louis Najar **CHAIR:** Jeanine Corn-Best

ACTION REQUESTED:

Bid - Grappler truck purchase - Consider the purchase of one (1) new grappler truck utilizing New Mexico Cooperative Education Services (CES) Statewide Price Agreement 16-019B-C101- all, at a cost of $150,242.42 from Robert's Truck Center of New Mexico dba Summit Truck Group. (Najar)

BACKGROUND:

An additional grappler truck was approved in the 2016-2017 Sanitation Budget to better maintain bulk service schedules and the cleanliness of the City alleys. The new truck becomes the 5th grappler truck with the primary mission of responding to calls from the side-loaders of heavily overloaded containers and off-route priority bulk collection requests. The 5th truck helps to keep the other grapplers on route and on-schedule. The current grappler truck inventory is summarized below:

Truck#	Year	Mileage (to-date)
307	2005	95,455
308	2010	55,625
323	2010	71,141
317	2013	20,506

In 2013 the City obtained a new grappler truck utilizing the CES procurement at a cost of $153,752.42. The Sanitation Department was satisfied with procurement and this year has requested a quote from Robert's Truck Center of New Mexico dba Summit Truck Group in the amount of $150,242.42. This vendor is located in Albuquerque.

FINANCIAL CONSIDERATION

This is budgeted out of the FY 2017 Sanitation Department.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

The Infrastructure Committee recommended approval (4-0) at their meeting on August 15, 2016.

STAFF RECOMMENDATION:

Consider the purchase of one (1) new grappler truck utilizing New Mexico Cooperative Education Services (CES) Statewide Price Agreement 16-019B-C101-All, at a cost of $150,242.42 from Robert's Truck Center of New Mexico dba Summit Truck Group.

Attachments

ATT Grapler Truck Quote
ATT Grappler CES Excerpt

SUMMIT
TRUCK GROUP
A HIGHER STANDARD OF VALUE

1623 Aspen Ave NW Albuquerque, NM 87104
505-243-7883 (office) 1-800-999-8653
505-242-6233 (fax)
summittruckgroup.com

DATE: AUGUST 9, 2016

TO Cooperative Educational Services/
City of Roswell – Solid Waste
Attn: Steve Miko
3006 W Brasher Rd
Roswell, NM 88203

SALESPERSON	JOB	PAYMENT TERMS	DUE DATE
Luis Garcia		30 days after chassis del.	

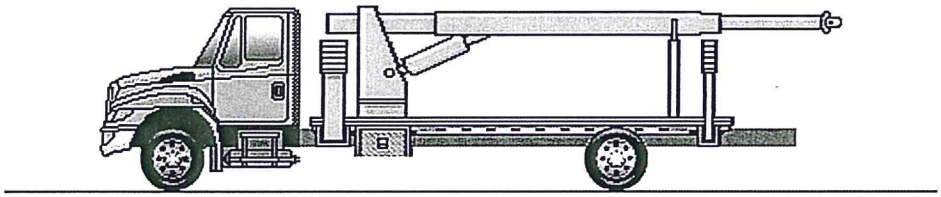
DESCRIPTION	LIST PRICE	SUBTOTAL	TOTAL
2017 International DuraStar 4300 SBA 4x2 to include: Cummins ISB 240HP engine, Eaton 6-speed transmission, 10K pound front axle, 19K pound rear axle	$90,362.00-27%	$65,964.00	**$65,964.00**
Chassis Options (per body company)			
Allison 3500 RDS automatic transmission	$9,976.00-20%	$7,980.80	
Frame reinforcement	$1,650.00-20%	1,320.00	
Battery disconnect	$397-20%	317.60	
Total Chassis Options			**$9,618.40**
Body Option for Chassis			
Peterson TL3 grapple hoist with Hardox HDX-1824 body (see spec for full breakdown)	$87,835.32-15%	$74,660.02	**$74,660.02**
Total: Chassis, Chassis Options and Body			**$150,242.42**
Pricing per CES price agreement #16-019B-C101-ALL Expires May 9, 2017			

INTERNATIONAL® July 29, 2016

Prepared For:
Roswell, City Of
Steve Mico
425 NORTH RICHARDSON
ROSWELL, NM 88201-
(505)624 - 6700
Reference ID: N/A

Presented By:
SUMMIT TRUCK & BUS GROUP OF ALBUQUERQUE
Luis Garcia
1623 ASPEN AVE NW
ALBUQUERQUE NM 87104 -
(505)243-7883

Thank you for the opportunity to provide you with the following quotation on a new International truck. I am sure the following detailed specification will meet your operational requirements, and I look forward to serving your business needs.



Model Profile
2017 4300 SBA 4X2 (MA025)

APPLICATION:	Lumber/Gypsum Crane
MISSION:	Requested GVWR: 35000. Calc. GVWR: 33000 Calc. Start / Grade Ability: 28.05% / 1.38% @ 55 MPH Calc. Geared Speed: 76.1 MPH
DIMENSION:	Wheelbase: 236.00, CA: 168.90, Axle to Frame: 96.00
ENGINE, DIESEL:	{Cummins ISB 240} EPA 2010, 240 HP @ 2400 RPM, 560 lb-ft Torque @ 1600 RPM, 2600 RPM Governed Speed, 240 Peak HP (Max)
TRANSMISSION, AUTOMATIC:	{Allison 3500_RDS_P} 5th Generation Controls; Wide Ratio, 5-Speed, With Overdrive; On/Off Hwy; Includes Oil Level Sensor, With PTO Provision, Less Retarder, With 80,000-lb GVW & GCW Max.
CLUTCH:	Omit Item (Clutch & Control)
AXLE, FRONT NON-DRIVING:	{Navistar Select} I-Beam Type, 12,000-lb Capacity
AXLE, REAR, SINGLE:	{Navistar Select} Single Reduction, 21,000-lb Capacity, 190 Wheel Ends Gear Ratio: 5.57
CAB:	Conventional
TIRE, FRONT:	(2) 11R22.5 HSR2 (CONTINENTAL) 498 rev/mile, load range G, 14 ply
TIRE, REAR:	(4) 11R22.5 HDR2 (CONTINENTAL) 491 rev/mile, load range H, 16 ply
SUSPENSION, RR, SPRING, SINGLE:	Vari-Rate; 23,500-lb Capacity, With 4500 lb Auxiliary Rubber Spring
FRAME REINFORCEMENT:	Outer "C" Channel, Heat Treated Alloy Steel (120,000 PSI Yield); 10.813" x 3.892" x 0.312"; (274.6mm x 98.9mm x 8.0mm); 480.0" (12192mm) Maximum OAL
PAINT:	Cab schematic 100GA Location 1: 1701, Beige (Custom) Chassis schematic N/A

CES

YOUR New Mexico Purchasing Cooperative

Since 1979

www.ces.org

Bringing the Essentials Together For You

JUNE 2016

Procurement Services
Vendor Listing
Category Index

4216 Balloon Park Rd NE
Albuquerque, NM 87109
Phone: 505-344-5470
Fax: 505-344-9343

ROBERT COHEN CO., LLC (dba SPORT SURFACES DISTRIBUTING, INC.)

Address: 1311 Cuesta Abajo Ct. NE, Ste. B, Albuquerque, NM 87113 Website: www.sport-surfaces.com
Contact: Robert Cohen Phone #: 505-243-2971 Toll Free #: 877-395-1978
Email: rcohen@sport-surfaces.com Fax #: 505-243-2975

Contract #	Solicitation Type / Category Description
2012-005 910-714 RCC	RFP A - Installation and Maintenance of Synthetic Tracks and Courts
2012-005 910-715 RCC	RFP A - Installation and Maintenance of Hardwood and Synthetic Floors
15-02AB-R101-ALL	Running Track and Court Surfaces - Materials, Installation, Repair and Renovation
15-02AB-R201-ALL	Synthetic Turf - Materials, Installation, Repair and Renovation
15-02AB-C301-ALL	Synthetic Turf - Cleaning, Grooming and Maintenance

The Robert Cohen Co., LLC have been selling, installing, maintain, and repairing high quality athletic and commercial floors, tracks and courts, and synthetic turf for over 30 years. We are distributors and certified installation contractors for MONDO vulcanized rubber flooring, indoor and outdoor tracks; UBU Sport for synthetic turf products; AACER maple hardwood flooring systems; and DECOTURF Tennis Court surfaces.

ROBERT'S TRUCK CENTER OF NEW MEXICO, LLC dba SUMMIT TRUCK GROUP

Address: 1623 Aspen Ave. NW, Albuquerque, NM 87104 Website: www.summttruckgroup.com
Contact: Brian Foster – School Bus and Truck Phone #: 505-243-7883 Toll Free #: 800-999-8653
Email: brian.foster@summittruckgroup.com Fax #: 505-242-6233

Contract #	Category Description
16-015AB-C101-ALL	School and Activity Buses
16-019B-C101-ALL	Medium and Heavy Duty Trucks, Truck Bodies, Accessories, Parts and Services

Robert's Truck Center of New Mexico, LLC dba Summit Truck Group, with locations in Albuquerque and Farmington, offers a complete line of medium and heavy duty truck manufactured by International and Crane Carrier with option for any truck body imaginable; dump, flat bed, water, refuse, service, van, etc., and is also a leading provider of International and Collins school and activity buses with a variety of options. Their service department provides warranty and ongoing maintenance and repair services, as well as a complete line of service, repair and replacement parts, body shop service, truck rentals for buses and medium and heavy duty trucks.

ROBSON CO.

Address: 2231 Whitfield Park Loop, Sarasota, FL 34243 Website: www.RobsonSchoolSigns.com
Contact: Craig Abbott Phone #: 941-753-6935 Toll Free #: 800-770-8585 x147
Email: craiga@robsoncorp.com Fax #: 941-756-8912

Contract #	Category Description
15-02BB-C321-ALL	Indoor and Outdoor Scoreboards, Marquees, Message Boards, Street Signs and Building Signage—Equipment Only

Robson Corporation offers a complete and comprehensive line of permanent and portable indoor and outdoor message boards and marquees of various sizes and shapes to meet individual CES Members and Participating Entities' needs. They possess the resources necessary to custom design, manufacture and deliver marquees in a cost effective and timely manner.

ROCKEFELLER'S CLEANING & RESTORATION CO.

Address: 5514 Coal Ave SE, Albuquerque, NM 87108
Contact: Joseph Goode Phone #: 505-268-5585 Toll Free #:
Email: jdgoode@rockefellerscleaning.com Fax #: 505-268-4878

Contract #	Category Description
16-012BB-C124-24	Specialty Cleaning & Related Services - Fire & Water Damage Clean-Up and Water Extraction Services

Rockefeller's Cleaning & Restoration Co. is a family owned and operated business started in 1979. Our mission is to be a professional disaster restoration company of the utmost integrity, to provide dependable high quality services and superior workmanship. Services include but not limited to: Fire, smoke clean up, water extraction, drying dehumidification, moisture control, and odor control and debris removal. In addition, we offer 24-hour on-call service.

ROCKY MOUNTAIN DESIGN GROUP, INC. dba ALBUQUERQUE FORKLIFT AND EQUIPMENT

Address: 5501 Midway Park, Albuquerque, NM 87109
Contact: Diandro Sena Phone #: 505-345-4418 Toll Free #:
Email: diandro@abqforklift.com Fax #: 505-345-4752
Contact: Natalline Davis Phone #: 505-345-4418 Toll Free #:
Email: abqoffice@abqforklift.com Fax #: 505-345-4752

Contract #	Solicitation Type / Category Description
2013-021 929-010 AFL	RFP C - Heavy Equipment, Part, Accessories, Supplies and Related Services

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 4.**
Meeting Date: 09/08/2016
COMMITTEE: General Service
CONTACT: N/A **CHAIR:** Tabitha Denny

ACTION REQUESTED:

RFP – 16-011 - Consider approval of RFP – 16-011 to move forward with negotiations, cost analysis and contract terms for finalization to award a contract to South Eastern New Mexico Tree Service to maintain the South Main Street medians, Reischman Park and Roswell International Air Center (RIAC) Park. (Williams)

BACKGROUND:

Since 2012 the City of Roswell has contracted landscape and turf care for the South Main Street medians, Reischman Park and RIAC Park. The contract was previously executed and fulfilled by DGM Landscaping and Garden Crest. Those contracts have since expired and the Parks and Recreation Department invited landscape companies to submit RFP proposals. South Eastern New Mexico Tree Service was the only proposal submitted and they qualified to complete the requirements from the RFP scope of work.

FINANCIAL CONSIDERATION

Financials will be considered once negotiations are completed.

LEGAL REVIEW:

The previous City Attorney has reviewed RFP – 16-011 legal terms.

BOARD AND COMMITTEE ACTION:

The General Services Committee recommended approval (3-0) at their meeting on August 3, 2016.

STAFF RECOMMENDATION:

Consider approval of RFP – 16-011 to move forward with negotiations, cost analysis and contract terms for finalization to award a contract to South Eastern New Mexico Tree Service to maintain the South Main Street medians, Reischman Park and Roswell International Air Center (RIAC) Park.

Attachments

RFP 16-011 Maintenance Medians and Park

South Eastern New Mexico Tree Service

Jimmie Arches 17 W Eyman St, Roswell, NM 88203 575-626-9987

Purchasing Agent
City of Roswell
425 N Richardson Ave
Roswell, NM 88201

July 10, 2016

RE: RFP-16-011
Maintenance Services for Parks and Recreation

Dear City of Roswell,

I read with interest your Request for Proposal for Maintenance Services for Parks and Recreation. I believe I possess the necessary skills and experience you are seeking and would provide a valuable service to the City.

I possess more than 30 years of progressive experience in the Tree and Lawn Maintenance field. Most recently, my responsibilities as owner of South Eastern New Mexico Tree Service include Tree pruning and removal. In the last 2 years I have completed many tree removals for the City of Roswell Code enforcement office, City of Roswell Zoo and Museum. I have also maintained the service of clean up and the trimming of hedges at the City of Roswell Convention Center as well as servicing many residential clients.

South Eastern New Mexico Tree Service has the experience, insurance and equipment to provide the services for the City of Roswell Parks and Recreation Department.

List of Equipment to be used in the maintenance service include:

- 55' Altec Bucket Truck
- Zero Turn Mower – 54" Cut
- Zero Turn Mower – 72" Cut
- 4 gas powered trimmers
- Back Pack blower
- 3 gas powered hand held blowers
- 18 chain saws – various bar lengths
- 2 – 30" gas powered hedge clippers
- Kabota 5200 tractor

I look forward to speaking with you further regarding the Maintenance Services for the Parks and Recreation Department. Please contact me at 575-626-9987, if you have and questions regarding my skills and experience.

Sincerely,

Jimmie Arches

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 5.**
Meeting Date: 09/08/2016
COMMITTEE: Finance
CONTACT: Monica Garcia **CHAIR:** Caleb Grant

ACTION REQUESTED:

ITB-17-004 - Automated Fuel Dispensing Service - Consider award of ITB-17-004 Automated Fuel Dispensing Service to AWC Propane Inc. for a one (1) year contract period from October 1, 2016 to September 30, 2017 with three (3) additional 12 month period mutually agreeable extensions. (Najar)

BACKGROUND:

ITB-17-004 Automated Fuel Dispensing Service bids were opened on August 23, 2016. Only one bid was received, which was from AWC Propane Inc. of Roswell NM. The monetary prices bid were: Unleaded Gas at $1.808/gallon with a $0.049/gallon spread, and Diesel #2 at $1.609/gallon with a $0.049/gallon spread.

This service is to allow City to utilize electronic fuel cards to fuel City vehicles and equipment. The service also includes filling of City owned fuel storage tanks. Currently AWC Propane is providing this service.

FINANCIAL CONSIDERATION

Fuel purchases are a budget item for each department.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

The Finance Committee recommended approval (3-0) at their meeting on September 1, 2016.

STAFF RECOMMENDATION:

Consider award of ITB-17-004 Automated Fuel Dispensing Service to AWC Propane Inc. for a 1 year contract period from October 1, 2016 to September 30, 2017 with three (3) additional 12 month period mutually agreeable extensions.

Attachments

ITB-17-004 Automated Fuel Dispensing Service

CITY OF ROSWELL
P.O. BOX 1838 + ROSWELL, NM USA 88202-1838 + TEL: 575.624.6700 + FAX: 575.624.6709 + www.roswell-nm.gov

To: Lupita Everett
Acting Purchasing Agent

August 24, 2016

Re: Recommendation of Award
Automated Fuel Dispensing Services
Bid No. ITB-17-004

Bids received on August 23, 2016 for subject services have been reviewed. Only one bid was received, which was from AWC Propane, Inc. dba AWC Propane Company of Roswell, NM. Fuel rates bid were as follows: (see attached bid sheet)

Unleaded - $1.808/gallon with a $0.049 Spread
Diesel #2 - $1.609/gallon with a $0.049 Spread.

The proposed terms for this service contract is for issuance of purchase orders for twelve (12) months from October 1, 2016 thru September 30, 2017. The agreement will allow option to extend the agreement for three (3) additional twelve (12) month periods if mutually agreeable with the vendor and City of Roswell.

Upon completion of review I hereby recommend award of this fuel service contract to AWC Propane Inc.. Award recommendation will be forwarded to Finance Committee of September 1, 2016 and on to September 8, 2016 City Council for full award process protocol.

If you have questions or comments, please contact me.

Sincerely,

Louis Najar, P.E.
Director of Planning & Engineering

xc: Project Files

CITY OF ROSWELL
Purchasing Department
425 North Richardson
Roswell, NM 882101

BID FOR

BID #: **ITB-17-004**
GROUP: **Automated Fuel Dispensing Service**
DEPARTMENT: **City Wide**
DATE OF BID OPENING: **August 23, 2016**
TIME OF BID OPENING: **2:00 p.m.**

TO: Air Freight Address: Purchasing Agent
City of Roswell
425 North Richardson
Roswell, NM 88201

The undersigned, doing business in the City of Roswell, submits herewith, in conformity with the instructions, conditions and specifications for the above listed bid:

Unleaded $ 1.808 $ .049 **Spread**

Diesel #2 $ 1.609 $ .049 **Spread**

ACKNOWLEDGEMENT OF:
(if applicable) ☒ ADDENUM A (1) ☐ ADDENUM B

Will take the bid or bids which are in the best interest of the City.

New Mexico Resident Business or Contractor Preference No. 10R55
Pursuant to Sections 13-1-21 and 13-4-2 NMSA 1978.

Delivery or completion date: July 1, 2016 FOB, ROSWELL, NM

Bid must remain valid 90 days after bid opening unless otherwise stated herein.

TERMS: Cash Discount — % — days

Net Cash $ — — days

Dated: 8-22-16
Telephone No.: 575-622-1130
Fax No.: 575-627-7002
Email: garyharrell2@juno.com

Name of Bidder: ABC Propane, Inc. dba AWC Propane Company
Mailing Address: P.O. Box 627, Roswell, NM 88202
Name: Gary Harrell
Signed By: Gary Harrell

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 6.**
Meeting Date: 09/08/2016
COMMITTEE: Finance
CONTACT: Monica Garcia **CHAIR:** Caleb Grant

ACTION REQUESTED:

ITB-17-005 Park Road Project - Consider award of ITB-17-005, Park Road Project to Constructors Inc. in the amount of $134,119.15, which includes gross receipts tax. (Najar)

BACKGROUND:

The Park Road Project is to remove surfacing, regrade and repave a portion of Park Road in the Cahoon Park, 5th Street vicinity. See attached aerial photo.

This portion of Park Road is in dire need of grading and pavement work. The City has a current NMDOT Co-op Project agreement which will reimburse $58,111 of project costs.

Bids were opened on August 23, 2016 with 4 bids received. Two bids were disqualified. The qualified low bid is from Constructors Inc. in the amount of $134,119.16, which includes gross receipts tax. Bid tabulation sheet is attached.

FINANCIAL CONSIDERATION

This project is part of the Capital Improvements approved projects budget.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

The Finance Committee recommended approval (3-0) at their meeting on September 1, 2016.

STAFF RECOMMENDATION:

Consider award of ITB-17-005, Park Road Project to Constructors Inc. in the amount of $134,119.15.

Attachments

ATT 1 ITB 17-005 Park Road Project
ATT 2 ITB 17-005 Park Road Aerial View

CITY OF ROSWELL
P.O. BOX 1838 ✦ ROSWELL, NM USA 88202-1838 ✦ TEL: 575.624.6700 ✦ FAX: 575.624.6709 ✦ www.roswell-nm.gov

To: Lupita Everett
Acting Purchasing Agent

August 23, 2016

Re: Recommendation of Award
Park Road Project
Control No. L200283
Bid No. ITB-17-005

Bids received on August 23, 2016 for subject project have been reviewed. Bid tabulation sheet is attached. Four bids were received as follows: (Amounts include Tax)

Constructors Inc. of Carlsbad, NM - $134,119.15
Bullseye Construction of Artesia, NM - $135,587.01- Bid Disqualified
Abraham's Construction of Albuquerque, NM - $155,660.00 – Bid Disqualified
J&H Services Inc. of Albuquerque, NM - $196,003.14

It should be noted that the bid documents for Bullseye Construction were not signed, nor was there a bid bond submitted. Abraham's Construction also failed to sign bid documents. As such, these bids are deemed non-responsive and disqualified.

Upon completion of my review I hereby recommend award of this contract to Constructors Inc. in the amount of $134,119.15. Award recommendation will be forwarded to Finance Committee of September 1, 2016 and on to September 8, 2016 City Council for full award process protocol.

If you have questions or comments, please contact me.

Sincerely,

Louis Najar, P.E.
Director of Planning & Engineering

xc: Project Files
NMDOT District 2 Local Projects Unit

Bid Tabulations - Bid Opening of August 23, 2016
Park Road Project - ITB-17-005,
SP-2-16(922), CN L200283

City of Roswell, NM
8/23/2016

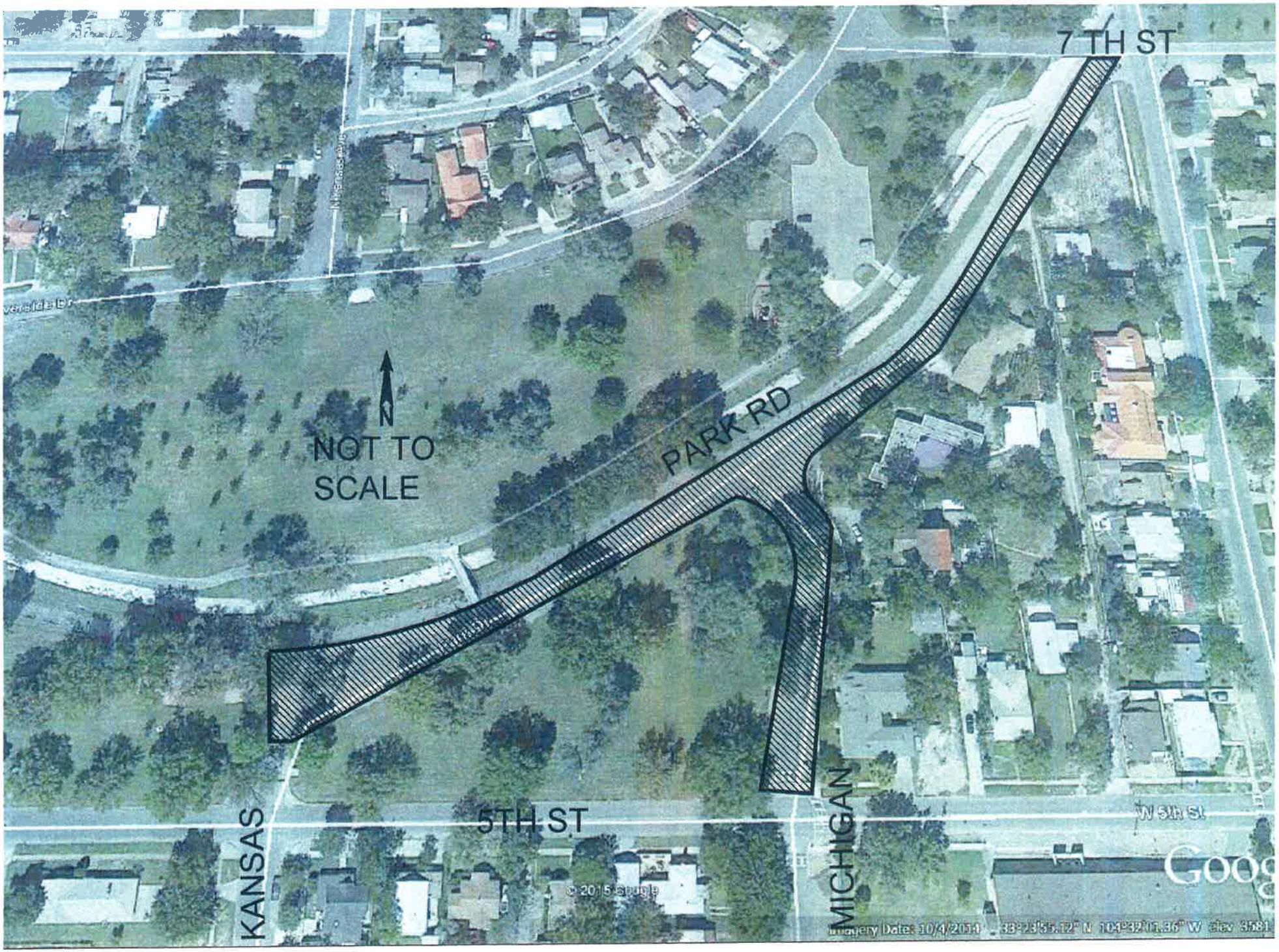
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	Engineer's Estimate UNIT COST	Engineer's Estimate COST	Constructors Inc. UNIT COST	Constructors Inc. COST	Bullseye Const. UNIT COST	Bullseye Const. COST
209000	BLADING AND RESHAPING	MILE	0.27	$35,000.00	$9,450.00	$43,100.00	$11,637.00	$3,290.00	$888.30
416001	MINOR PAVEMENT	TON	845.00	$90.00	$76,050.00	$105.00	$88,725.00	$119.47	$100,952.15
601100	REMOVAL OF SURFACING**	SQ. YD.	5000.00	$3.00	$15,000.00	$3.00	$15,000.00	$3.34	$16,700.00
621000	MOBILIZATION	LS	1.00	$10,000.00	$10,000.00	$3,000.00	$3,000.00	$5,587.00	$5,587.00
702800	TRAFFIC CONTROL PLAN	LS	1.00	$2,500.00	$2,500.00	$4,400.00	$4,400.00	$1,000.00	$1,000.00
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	1.00	$2,750.00	$2,750.00	$2,000.00	$2,000.00	$1,000.00	$1,000.00
								This Bid is Disqualified	
								Bid documents not signed,	
								no bid bond submitted.	
	Subtotal				$115,750.00		$124,762.00		$126,127.45
	Gross Receipts Tax 7.50%				$8,681.25		$9,357.15		$9,459.56
	Total Project Cost				$124,431.25		$134,119.15		$135,587.01

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	Abraham's Const. UNIT COST	Abraham's Const. COST	J&H Services Inc. UNIT COST	J&H Services Inc. COST	UNIT COST	COST
209000	BLADING AND RESHAPING	MILE	0.27	$5,000.00	$1,350.00	$60,846.31	$16,428.50		
416001	MINOR PAVEMENT	TON	845.00	$110.00	$92,950.00	$170.00	$143,650.00		
601100	REMOVAL OF SURFACING**	SQ. YD.	5000.00	$7.20	$36,000.00	$2.45	$12,250.00		
621000	MOBILIZATION	LS	1.00	$8,000.00	$8,000.00	$5,000.00	$5,000.00		
702800	TRAFFIC CONTROL PLAN	LS	1.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00		
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS	1.00	$3,500.00	$3,500.00	$2,000.00	$2,000.00		
			This Bid is Disqualified						
			Bid documents not signed.						
	Subtotal				$144,800.00		$182,328.50		
	Gross Receipts Tax 7.50%				$10,860.00		$13,674.64		
	Total Project Cost				$155,660.00		$196,003.14		

I Certify that all information and Tabulations are correct.

Louis Najar P.E., Director of Planning & Engineering

Date: 8-23-16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KANSAS
MICHIGAN
N 5th St

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 7.**
Meeting Date: 09/08/2016
COMMITTEE: Legal
CONTACT: N/A **CHAIR:** Jason Perry

ACTION REQUESTED:

Consider approval to authorize Mistic, Inc., a New Mexico Corporation, to amend their current lease agreement to allow the return of certain parts of the leasehold to landlord and a reduction of rent. (Scott Stark)

BACKGROUND:

Mistic, Inc., is experiencing reduced revenue due to current economic conditions.

FINANCIAL CONSIDERATION

Mistic, Inc., is requesting to pay landlord as rent the sum of $6,330 monthly; $75,960 annually beginning August 1, 2016 through July 31, 2017. Rent Abatement Policy – not applicable.

LEGAL REVIEW:

The Contract City Attorney has reviewed the leases and amendments.

BOARD AND COMMITTEE ACTION:

The Legal Committee recommended approval (3-0) at their meeting on August 25, 2016.

STAFF RECOMMENDATION:

Consider approval to authorize Mistic, Inc., a New Mexico Corporation, to amend their current lease agreement to allow the return of certain parts of the leasehold to landlord and a reduction of rent.

Attachments

RIAC Lease - Mistic, Inc..

EIGHTH ADDENDUM
TO LEASE AGREEMENT

THE CITY OF ROSWELL, NEW MEXICO, a municipal corporation, hereinafter "Landlord" and MISTIC, INC. a New Mexico Corporation, hereinafter "Tenant" hereby agree to the following amendment to that certain Lease Agreement dated December 8, 2011.

WHEREAS, Tenant desires to return certain parts of the leasehold to Landlord and;

WHEREAS, as current economic conditions have caused a reduction of Tenant's revenue which could endanger the viability of Tenant's Roswell business, Tenant requests a reduction in rental rates reflective of the much reduced building square footage retained by Tenant, from approximately 100,000 square feet to approximately 42,000 square feet;

NOW THEREFORE, Landlord and Tenant (each "Party" and both collectively the "Parties") agree as follows:

1. Paragraph 1. GRANTING CLAUSE AND PREMISES., text box describing the Premises is deleted and replaced with the following: "A partially fenced area of land, 256 acres, more or less, in the eastern portion of the Roswell International Air Center (RIAC), bounded roughly by the north high speed driving road running west from the RIAC east fence, the east fence of the RIAC, the south drainage ditch running northeast out of the storage bunker area, the east fence of the bunker area, an east-west line drawn south of bunker 1146, the east fence of the Drag way, the north fence of the bunker area, Will Rogers Rd. and the alert area west fence. The area contains Building No. 1166 consisting of 18,424 square feet, more or less, Building 1231 consisting of 2,000 square feet, more or less, 12 explosive storage bunkers consisting of 21,894 square feet, more or less, located at the Roswell International Air Center, identified on a plat attached hereto and made a part hereof, identified and listed as Exhibit "A" (Premises)"
2. Exhibit "A" (Premises) of the Lease is deleted and replaced with Exhibit "A" (Premises) attached hereto and made a part hereof.
3. Paragraph 3. RENT. is deleted and replaced with the following:
4. "3. RENT. Tenant agrees to pay to Landlord as rent the sum of Seventy Five Thousand, Nine Hundred Sixty Dollars and No Cents ($75,960.00), payable in 12 monthly installments of $6,330.00 retroactive to August 1, 2016 through July 30, 2017. Thereafter rent shall increase each year by 2.5% or CPI-Urban, All Cities Average, whichever is greater rounded to the nearest dollar and in no case to exceed 5% in any one year. Rent and other fees are due on the first day of each month. If Tenant fails to pay all rent and other fees due for any month by the tenth calendar day of the month that said rent and fees are due, Tenant shall pay to Landlord an additional 2% finance charge, as a penalty, each month until the full amount of that month's rent is paid. This penalty shall be immediately payable without limiting Landlord in the exercise of

any other right or remedy to which it may be entitled by reason of Tenant's failure to pay rent when due. All rent shall be paid to Landlord without abatement, reduction or set off of any kind except as herein specifically provided."

5. Transfer of land and buildings being returned to Landlord shall be effective September 9, 2016.
6. On or about August 1, 2018 Landlord may conduct analysis of rental rates and at Landlords sole discretion may initiate negotiations of rental rates. If the parties are unable to come to agreement on a renegotiated rental rate the rate will be determined by arbitration before Steven L. Bell, retired New Mexico District Judge, or his designee. Each party will pay ½ of the costs of any arbitration, or as otherwise directed by the arbitrator.
7. Except as amended herein, the original Lease and addenda shall continue without change, and in full force and effect as originally executed.

IN WITNESS WHEREOF, this Eighth Addendum to Lease Agreement is done and executed in Roswell, New Mexico this 8th day of September 2016.

CITY SEAL

LANDLORD:
CITY OF ROSWELL, NEW MEXICO

_____
Dennis Kintigh, Mayor

_____
Sharon Coll, City Clerk

TENANT:
MISTIC, INC.

_____
Mark Fischer, Director of Plans

EXHIBIT “A”

EXHIBIT “A”

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 8.**

Meeting Date: 09/08/2016
COMMITTEE: N/A
CONTACT: Mike Mathews **CHAIR:** N/A

ACTION REQUESTED:

Resolution 16-62 - The Resolution shall mandate the cleanup of approximately forty-eight (48) separate properties within the City.(Mathews)

BACKGROUND:

At present, no more efficient means is available to enforce the requirements that property within the City limits be kept clean and orderly. Citation of property owners requires they be present in Roswell. Even the citations do not provide for the actual clean up and cannot give the City the right to file a lien for the cleanup expense. This procedure is cumbersome, but should result in resolution of some more severe situations.

FINANCIAL CONSIDERATION

Adoption of the resolution will probably cause a number of people to voluntarily clean up their property. Most of the balance will be cleaned up by the City and liens will be filed and later foreclosed. A few people may appeal the resolution to Council and a hearing will have to be provided to hear their appeals. Overall, the resolution should affect rapid cleanup of this season's weeds and other debris, followed by an extended collection period.

LEGAL REVIEW:

The previous City Attorney has reviewed the current ordinance.

BOARD AND COMMITTEE ACTION:

Not applicable.

STAFF RECOMMENDATION:

Code Enforcement recommends approval of Resolution 16-62.

Attachments

ATT Resolution 16-62 Weeds
ATT Resolution 16-62 Weeds Lists

CITY OF ROSWELL
RESOLUTION NO. 16-62

A RESOLUTION REQUIRING THE REMOVAL OF CERTAIN RUBBISH, WEEDS, WRECKAGE OR DEBRIS; PROVIDING THAT THE CITY SHALL HAVE A LIEN FOR THE COST OF REMOVAL AND DECLARING CERTAIN PROPERTY TO BE SO COVERED WITH RUBBISH, WEEDS, WRECKAGE OR DEBRIS AS TO CONSTITUTE A PUBLIC NUISANCE PREJUDICIAL TO HEALTH, SAFETY AND GENERAL WELFARE.

WHEREAS, the City Council of the City of Roswell, New Mexico, finds that the premises listed in Exhibit A attached hereto and purportedly owned of record, or occupied by the parties named, have accumulated rubbish, weeds, wreckage or debris so as to be a menace to the public health, safety and general welfare of the inhabitants of the community; and further, that it is in the public interest to require the removal thereof, according to law;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL, THE GOVERNING BODY OF THE CITY OF ROSWELL, NEW MEXICO, that:

1. The premises set forth in Exhibit A are declared to be so covered with rubbish, weeds, wreckage or debris as to constitute a menace to the public comfort, health, safety and general welfare within the purview of Article 3-18-5 NMSA 1978.

2. The owners, occupants or agents in charge of said premises are hereby ordered to remove such accumulated rubbish, weeds, wreckage or debris within ten (10) days of the receipt of notice by certified mail or from the date of publication of this resolution. In the event such removal is not commenced or written objection filed with the City Clerk within ten (10) days after service of a copy of this resolution, then the City Manager is authorized and directed to cause such accumulated rubbish, weeds, wreckage or debris to be removed at the sole cost and expense of the owner, or other parties having an interest in the properties, and further, that the reasonable cost of such removal shall be and become a subsisting and valid lien against such property so removed and the lot or parcel of land from which such removal was made and shall be foreclosed in the manner provided by law for the foreclosure of municipal liens.

3. In the event the owner or other person aggrieved shall file a protest within the time provided, the City Council shall thereafter fix a date for hearing. At the hearing, the protestant shall be entitled to be heard in person, by agent or attorney and the City Council shall consider evidence whether or not its previous action shall be enforced or rescinded; if it shall be determined that the removal order should be enforced.

4. Persons aggrieved by the determination of the City Council have a right to appeal to a court of competent jurisdiction by giving notice of such appeal to the City Council within five (5) days after the day of issuance of such order or decision, together with a petition for court review duly filed with the Clerk of the Court within twenty (20) days of the date of issuance of the order or decision complained of.

ADOPTED, SIGNED AND APPROVED 8th day of September 2016.

CITY SEAL

_____
Dennis J. Kintigh, Mayor

ATTEST:

_____
Sharon Coll, City Clerk

1524 S. GARDEN AVE. FRUITLAND Block 4 Lot 1 D/C N 50' S 150' E 140' RAMIREZ, MARIA G. 110 S. PENNSYLVANIA AVE. ROSWELL, NM 88203	508 E. 4TH ST. LEA Lot 28 ROJAS, FRANCISCO VALLEJO 11222 CRESSON ST. NORWALK, CA 90650
505 E. 3RD ST. LEA Lot 60 E2 & Lot 61 SANCHEZ, ISAAC IVAN VITO 125 VAQUERO LN. APT. 81 EL PASO, TX 79912	420 E. 3RD ST. LEA Lot 84 COPP, MICHAEL F.; COPP, MICHAEL A. PO BOX 257 HARTFORD, VT 05047
409 S. ASH AVE. RONNIE OTERO Lot 8 REHRIG, LINDA L. 82 HILLSDALE RD. DEXTER, NM 88230	205 S. SHERMAN AVE. HALEYS AMEND Block 4 Lot 10 BACA, MARTHA J. & JOSE D. 900 E. MATHEWS ST. ROSWELL, NM 88203
704 E. 5TH ST. MAPES Block 2 Lot 2 FULLER, CATHY 3701 W. PINE LODGE RD. ROSWELL, NM 88201	702 E. 5TH ST. BELLE PLAIN Lot 38 W 85.2' S 208.7' N 253.70' & Lot 38 E 60' W 145.2'S 191.5' N 236.5' RAMIREZ, CARLOS A.; GARCIA, MARIA CELIA GUADALUPE PO BOX 805 CHULA VISTA, CA 91912
808 ELDORA DR. WESTOVER Block 2 Lot 6 GRAHAM, GLENN RAY; ESPINOSA, BETTY GRAHAM C/O LOIS TAYLOR 2013 BRAZOS ST. ROSWELL, NM 88201	1102 N. ATKINSON AVE. S 33 T 10S R 24E NE4NE4 N 50' S 80' W 120' E 150' GARCIA, LOIDA V. PO BOX 44 HONDO, NM 88336
1000 N. ATKINSON AVE. CALANCHE SUBDIVISION Lot 1 KEENEY, JOEL; CALANCHE, MARIA C. 1000 N. ATKINSON AVE. ROSWELL, NM 88201	APPROX 1002 N. ATKINSON AVE. CALANCHE SUBDIVISION Tract A KEENEY, JOEL; CALANCHE, MARIA C. 1000 N. ATKINSON AVE. ROSWELL, NM 88201
722 PEAR ST. CARPENTER Block 1 Lot 1 GOINS, STANLEY A. PO BOX 683 FENCE LAKE, NM 87315-0683	902 S. ASH AVE. BARNETTS Block 14 Lot 2 GUEVARA, ABRAHAM; GUEVARA, RUDY LAWRENCE; GUEVARA, ABRAHAM S & GENEVA 504 E. SUMMIT ST. ROSWELL, NM 88203
APPROX. 330 E. 7TH ST. BELLE PLAIN Lot 58 E 88' TURNER, LAMAR 6152 DICKSON RD. APT. 3 INDIANAPOLIS, IN 46226	APPROX. 118 ½ E. BYRNE ST. PECOS VALLEY VILLAGE Block 6 Lot 36 THOMAS, ELIZABETH 37181 IMMIGRANT RD. PLEASANT HILL, OR 97455

804 S. ATKINSON AVE. 804 S. ATKINSON AVE. #1/2 S 4 T 11S R 24E E2E2NE4SE4 W294.42' E 334.42' S228.8' N888.8'/W55' E334.42' S32.2' N920.62'/E2W2E2NE4SE 4 E37.55' N150'/E167.1' S734.8' N884.8' AA&S INC. 12066 SINGING WINDS ST. PARKER, CO 80138	806 S. ATKINSON AVE. 808 S. ATKINSON AVE. S 4 T 11S R 24E E2E2NE4SE4 W294.42' E 334.42' S228.8' N888.8'/W55' E334.42' S32.2' N920.62'/E2W2E2NE4SE4 E37.55' N150'/E167.1' S734.8' N884.8' AA&S INC. 12066 SINGING WINDS ST. PARKER, CO 80138
810 S. ATKINSON AVE. 810 S. ATKINSON AVE. #1/2 S 4 T 11S R 24E E2E2NE4SE4 W294.42' E 334.42' S228.8' N888.8'/W55' E334.42' S32.2' N920.62'/E2W2E2NE4SE4 E37.55' N150'/E167.1' S734.8' N884.8' AA&S INC. 12066 SINGING WINDS ST. PARKER, CO 80138	900 S. ATKINSON AVE. S 4 T 11S R 24E E2E2NE4SE4 W294.42' E 334.42' S228.8' N888.8'/W55' E334.42' S32.2' N920.62'/E2W2E2NE4SE4 E37.55' N150'/E167.1' S734.8' N884.8' AA&S INC. 12066 SINGING WINDS ST. PARKER, CO 80138
APPROX. 78 E. BYRNE ST. PECOS VALLEY VILLAGE Block 6 Lot 25 DELPONTE, LINDA 721 THRONE DR. - #216 EUGENE, OR 97402	1001 KINGS DR. CRESCENT HEIGHTS Block 1 Lot 16 FINLEY, GEORGE E.; FINLEY, MYRTLE C. C/O PATRICK FINLEY 4414 AVENIDA DEL SOL NE ALBUQUERQUE, NM 87110-6179
606 N. MISSOURI AVE. WEST SIDE Block 8 Lot 4 JANSSON, LESLIE PO BOX 3464 ROSWELL, NM 88202-3464	2322 N. GARDEN AVE. ROGERS Block 1 Lot 1 LEYBA, LORENZO; LEYBA, BENNY 617 W. SUMMIT ST. ROSWELL, NM 88203
1805 CAMBRIDGE AVE. JOHNSON & ALLISON REDIV Block 1 VICTORIA HEIGHTS Block B Lot 15 YOUNG, RALPH L. SR. 601 W. CHURCH ST. ROSWELL, NM 88203	1726 N. OHIO AVE. CRESCENT HEIGHTS Block 6 Lot 10 SCHWALBE, TOM J.; SCHWALBE, PAM C. 1726 N. OHIO AVE. ROSWELL, NM 88201
4 EVERGLADE CT. DELTA ACRES Block 4 Lot 18 STEARNS LENDING, INC. 4 HUTTON CENTRE DR. SANTA ANA, CA 92707	710 W. 2ND ST. OVARDS Block 1 Lot 14 WIMBERLY, DORIS M. 1426 NEW HAVEN DR. MANSFIELD, TX 76063
606 W. WALNUT ST. WEST SIDE Block 15 Lot 10 E 50' N 40' And Lot 11 E 50' And Lot 12 E 50' J.E. KLUVES LIVING TRUST 201 S. WASHINGTON AVE. ROSWELL, NM 88203	513 W. FOREST ST. SOUTH HIGHLANDS REDIVISION Block 19A Lot 12 W 32' And Lot 14 MARTINEZ, ROY LAWRENCE 1151 WALNUT AVENUE # 80 TUSTIN, CA 92780
606 W. TILDEN ST. ALAMEDA HEIGHTS Block 4 Lot 2 E 50' N 100' PURPLE LUPINE, LLC. 12644 YORBA LINDA SE ALBUQUERQUE, NM 87123	1021 S. UNION AVE. FARM Block 2 Lot 13 PARKS, GARY W.; ROMERO, LLOYD M. 8115 SHEFFIELD PL. NW ALBUQUERQUE, NM 87120

1108 W. ALAMEDA ST. WRIGHTS Block 11 Lot 3 E 58.4' And Lot 4 E 58.4' MOGHISAEI, MAJIDREZA; MOGHISAEI, BEHNAZ PO BOX 1177 FOLSOM, CA 95763	904 DAVIDSON DR. FARM Block 2 Lot 22 MENDEZ, JERRY H. 35 ROPE ROAD CLOVIS, NM 88101
1110 W. ALAMEDA ST. WRIGHTS Block 11 Lot 3 W 50' E 108.4' And Lot 4 W 50' E 108.4' MOGHISAEI, MAJIDREZA; MOGHISAEI, BEHNAZ PO BOX 1177 FOLSOM, CA 95763	404 S. EVERGREEN AVE. WILL JOHNSON HEIGHTS 2 Block 3 Lot 3 ELMER, JAMES L.; ELMER, BONNIE M. 1730 IDAHO AVE. SAN ANGELO, TX 76904
309 S. MONTANA AVE. PAULY Block 5 Lot 6 FOX, MILISSA D. 1625 SPRUCE AVE., SPC. 8 LAS CRUCES, NM 88001	7 OAK DR. OAK KNOLL Block 1 Lot 7 SPENGLER, RONALD R.; SPENGLER, MARY M. 7318 LAKEVIEW AVE. MESA, AZ 85209
APPROX. 311 S. MONTANA AVE. PAULY Block 5 Lot 5 ALLISON, CHARLES ROBERT REVOCABLE TRUST 2403 E. 3770 SOUTH SAINT GEORGE, UT 84790	1101 S. WYOMING AVE. WESTERN MEADOWS TOWNHOMES SUMMARY PLAT Block 0 Lot 17 NEW MEXICO GROWTH, LLC. PO BOX 1000 ROSWELL, NM 88202-1000
1605 S. KANSAS AVE. PLAINS PARK Block 5 Lot 3 VARELA, DONALD L. 1605 S. KANSAS AVE. ROSWELL, NM 88203	1105 S. WYOMING AVE. WESTERN MEADOWS TOWNHOMES SUMMARY PLAT Block 0 Lot 19 NEW MEXICO GROWTH, LLC. PO BOX 1000 ROSWELL, NM 88202-1000
517 CYPRESS AVE. 6-11-24 SW4 NE4 N 60' S 155' E 127.45' W 147.45' CALDERON, ARMANDO B.; CALDERON, MARIA 610 S. SHELLEY ST. SANTA ANA, CA 92703	1103 S. WYOMING AVE. WESTERN MEADOWS TOWNHOMES SUMMARY PLAT Block 0 Lot 18 NEW MEXICO GROWTH, LLC PO BOX 1000 ROSWELL, NM 88202-1000
1107 S. WYOMING AVE. WESTERN MEADOWS TOWNHOMES SUMMARY PLAT Block0 Lot 20 NEW MEXICO GROWTH, LLC. PO BOX 1000 ROSWELL, NM 88202-1000	1619 S. KENTUCKY AVE. GRAND VIEW Block 3 Lot 15 N 31.4' And Lot 16 S 18.6' THORP, STACI 502 BARNETT DR. ROSWELL, NM 88203
1006 W. 1ST ST. WRIGHTS Block 6 Lot 13 E 50' N 40' And Lot 14 E 50' FRANCO, MARY ELLEN 607 HICKORY DR. ROSWELL, NM 88203	401, 401 ½ S. KANSAS AVE. PAULY Block 12 Lot 1 W 68 1/3' SCHWEDER, WILLIAM D.; SCHWEDER, GEORGIA 607 S. OHIO AVE. ROSWELL, NM 88203

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 9.**
Meeting Date: 09/08/2016
COMMITTEE: N/A
CONTACT: Mike Mathews **CHAIR:** N/A

ACTION REQUESTED:

Resolution 16-63 - The Resolution shall require the removal or demolition of six (6) dilapidated structures. (Mathews)

BACKGROUND:

These structures constitute a public nuisance harmful to the public health, safety and general welfare.

FINANCIAL CONSIDERATION

Resolution and notice will be served to owners requiring action within fifteen (15) days. Demolition by the City will proceed if no action is taken and a lien will be placed on the property for cost of removal.

LEGAL REVIEW:

The previous City Attorney has reviewed the current ordinance.

BOARD AND COMMITTEE ACTION:

Not applicable.

STAFF RECOMMENDATION:

Code Enforcement recommends approval of Resolution 16-63.

Attachments

ATT Resolution 16-63 Cond
ATT Resolution 16-63 Cond Listing

CITY OF ROSWELL
RESOLUTION NO.16-63

A RESOLUTION REQUIRING THE REMOVAL AND/OR DEMOLITION OF CERTAIN DAMAGED AND DILAPIDATED BUILDINGS, STRUCTURES OR PREMISES; PROVIDING THAT THE CITY SHALL HAVE A LIEN FOR THE COST OF REMOVAL; PRESCRIBING THE PROCEDURE INCIDENT TO SUCH REMOVAL AND/OR DEMOLITION AND DECLARING CERTAIN PROPERTY TO BE IN SUCH STATE OF DISREPAIR, DAMAGE AND DILAPIDATION AS TO CONSTITUTE A DANGEROUS BUILDING AND A PUBLIC NUISANCE PREJUDICIAL TO THE PUBLIC HEALTH, SAFETY AND GENERAL WELFARE.

WHEREAS, it is the opinion of the City Council of the City of Roswell, New Mexico, that those certain buildings or structures upon the premises located as follows and purportedly owned of record, or occupied by the parties hereinafter named, are and have become in such state of disrepair, damage and dilapidation as to be a menace to the public health, safety and general welfare of the inhabitants of the community; and further, that it is in the public interest to require the removal thereof, according to law, by reason of the condition or conditions set forth in Exhibit "A".

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL, THE GOVERNING BODY OF THE CITY OF ROSWELL, NEW MEXICO:

1. That the buildings or structures set forth in Exhibit "A" are declared to be in such state of disrepair, damage and dilapidation as to constitute a dangerous building within the purview of Roswell Municipal code section 16-12, as well as being a public nuisance prejudicial to the public health, safety and general welfare. That such dangerous buildings or structures set forth, if any, cannot reasonably be repaired so that they will no longer exist in violation of the terms of the ordinance.

2. The owners, occupants, if any, or agent in charge of said premises be, and they hereby are ordered and required to remove such dangerous buildings, or structures within a reasonable time thereafter not to exceed fifteen (15) days from the receipt of notice by certified mail or from date of publication of this resolution as hereinafter provided, and as the case may be. In the event such removal be not commenced by such owner, occupant or agent, or written objection thereto be filed with the City Clerk within ten (10) days after service of a copy of this resolution by certified mail or by publication, requesting a hearing, then and in such event, the City Manager is hereby authorized and directed to cause such dangerous buildings or structures to be removed at the sole cost and expense of the owner, owners or other parties having an interest in said properties, and further, that the reasonable cost of such removal shall be and become a subsisting and valid lien against such property so removed and the lot or parcel or land from which such removal was made and shall be foreclosed in the manner provided by law for the foreclosure of municipal liens. Alternatively, the City Manager may act pursuant to Article 3-18-5 (G) (NMSA, 1978), and cause the dangerous buildings or structures to be removed and give title to them or their components to the removing

person or persons.

3. In the event the owner or other interested party aggrieved shall file his protest within the time herein provided, requesting a hearing, on the matter, the City Council shall fix a date for hearing, at which time said Protestants shall be entitled to be heard in person, by agent or attorney, and the City Council shall consider evidence whether or not its previous action should be enforced or rescinded. If it shall be determined that the removal order should be enforced, and the owner(s) shall fail or neglect to comply with said decision of the City Council, they shall have a right of appeal to a court of competent jurisdiction by giving notice of such appeal to the City Council within the (10) days after the date of the City Council decision, together with his petition for court review duly filed with the Clerk of the Court within thirty (30) days of the date of the decision complained of.

4. Upon the adoption of this resolution, it shall be the duty of the City Building Inspector to notify the owner, occupant or agent in charge of such building or structure of the adoption of this resolution by serving a copy thereof upon him by certified mail, return receipt requested; and in the event such owner, occupant or agent cannot be found or served within said City as herein above provided, such notice may be served by posting a copy of said resolution upon the premises complained of, followed by legal publication of said resolution one time in a newspaper of general circulation within the city.

ADOPTED, SIGNED AND APPROVED 8th day of September 2016.

CITY SEAL

_____
Dennis J. Kintigh, Mayor

ATTEST:

_____
Sharon Coll, City Clerk

Location	Condition	Name
806 S. ATKINSON AVE. S 4 T 11S R 24E E2E2NE4SE4 W294.42' E 334.42' S228.8' N888.8'/W55' E334.42' S32.2' N920.62'/E2W2E2NE4SE4 E37.55' N150'/E167.1' S734.8' N884.8'	Dilapidated/ Deterioration Open To Public, Inadequate Maintenance	AA&S INC. 12066 SINGING WINDS ST. PARKER, CO 80138
APPROX. 810 S. ATKINSON AVE. S 4 T 11S R 24E E2E2NE4SE4 W294.42' E 334.42' S228.8' N888.8'/W55' E334.42' S32.2' N920.62'/E2W2E2NE4SE4 E37.55' N150'/E167.1' S734.8' N884.8'	Dilapidated/ Deterioration Open To Public, Inadequate Maintenance	AA&S INC. 12066 SINGING WINDS ST. PARKER, CO 80138
APPROX. 900 S. ATKINSON AVE. (REAR STRUCTURE) S 4 T 11S R 24E E2E2NE4SE4 W294.42' E 334.42' S228.8' N888.8'/W55' E334.42' S32.2' N920.62'/E2W2E2NE4SE4 E37.55' N150'/E167.1' S734.8' N884.8'	Dilapidated/ Deterioration Open To Public, Inadequate Maintenance	AA&S INC. 12066 SINGING WINDS ST. PARKER, CO 80138
1004 W. 14TH ST. HOWARD PLACE Block 3 Lot 1	Dilapidated/ Deterioration Open To Public, Inadequate Maintenance	ALVARADO, BENJAMIN 1204 HARVARD DR. ROSWELL, NM 88203
1201 N. LEA AVE. WEST SIDE Block 32 Lot 8	Dilapidated/ Deterioration Open To Public, Inadequate Maintenance	TUCKER, TRACY L. 1201 N. LEA AVE. ROSWELL, NM 88201
606 W. TILDEN ST. ALAMEDA HEIGHTS Block 4 Lot 2 E 50’ N 100’	Dilapidated/ Deterioration Open To Public, Inadequate Maintenance	PURPLE LUPINE, LLC. 12644 YORBA LINDA SE ALBUQUERQUE, NM 87123

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 10.**
Meeting Date: 09/08/2016
COMMITTEE: N/A
CONTACT: Sharon Coll **CHAIR:** N/A

ACTION REQUESTED:
Consider approval of the minutes from the August 11, 2016 Regular City Council meeting. (Coll)

BACKGROUND:
Minutes from the August 11, 2016 Regular City Council meeting.

FINANCIAL CONSIDERATION
Not applicable.

LEGAL REVIEW:
Not applicable.

BOARD AND COMMITTEE ACTION:
Not applicable.

STAFF RECOMMENDATION:
Consider approval of the minutes from the August 11, 2016 Regular City Council meeting.

Attachments

August 11, 2016 City Council Minutes

D R A F T

Regular Meeting of the Roswell City Council
Held in the Bassett Auditorium at the Roswell Museum and Art Center
Thursday, AUGUST 11, 2016 at 6:01 p.m.

The meeting convened with Mayor Kintigh presiding.
Present: Denny, Henderson, Best, Perry, Mackey, Sandoval, Grant, Oropesa, Sanchez, Kintigh
Absent: Foster

Councilor Mackey led in the Pledge of Allegiance and Councilor Best in Prayer.

Notice of this meeting was given to the public in compliance with Sections 10-15-1 through 10-15-4 NMSA 1978 and Resolution 15-56.

Councilor Sanchez moved to approve the August 11, 2016 regular City Council agenda by moving item 20 to 22 after closed session. Councilor Mackey was the second. A voice vote was 8-1 and the motion passed with Councilor Perry voting no and Councilor Foster being absent. Councilor Perry explained that he has concerns with the abatement policy and that is why he voted no.

NON-ACTION ITEMS (Information Items)

1. **Presentation - New Website** - Mrs. Phillips gave a presentation on the new City website. A committee of staff members who utilize the city or a city department website was formed. The committee selected CivicPlus, a company that specializes in municipality websites. New features for the city website include the following:

    - Alert center
    - Form center
    - Job postings
    - News flash
    - Mobile updates
    - Content Scheduling
    - Intranet

    The following six departments also have new websites:

    - police
    - fire
    - library
    - museum
    - civic center
    - parks and recreation

PUBLIC PARTICIPATION ON AGENDA ITEMS

In order to speak you must sign up prior to the Council Meeting.

CONSENT ITEMS

Bids and RFP's

2. **Elgin Broom Bear Street sweeper** - Consider approval of award to Pete's Equipment Repair Inc. for one (1) 2016 Elgin Broom Bear street sweeper in the amount of $267,352. The purchase is via National Joint Powers Alliance (NJPA), a national public service agency committed to serving

members nationally and locally through a variety of valued programs. The City of Roswell is a current NJPA member. The purchase meets all procurement requirements.

RIAC Leases

3. **Consider approval to authorize CAVU Aerospace, Inc., an Arkansas Corporation, to renew their current lease agreement on Building No. 61 and the fenced area surrounding the building.** CAVU Aerospace, Inc., leases the building for the purpose of aircraft parts shipping. Building space is 1,425 square feet. The new monthly rent amount is $257; $3,084 annually. They have been a customer since August 2015.

4. **Consider approval to authorize J&D Fiberglass, LLC, a Liability Corporation, to renew their current lease agreement on Building No. 755.** J&D Fiberglass, LLC, leases the building for the purpose of manufacturing. The building space is 3,669 square feet. New monthly rent amount is $582; $6,984 annually. J&D Fiberglass, LLC, has been a customer since September 2010.

5. **Consider approval to authorize Weldon Wagner, an individual, to renew his current lease agreement on Building No. 91, Space D and joint use of the ground floor office area.** Weldon Wagner leases the building for the purpose of storage and maintenance of aircraft. The building space is 4,589 square feet. New monthly rent amount is $762; $9,144 annually. Weldon Wagner has been a customer since September 1993.

6. **Consider approval to authorize Dean Baldwin Painting, LP, a Texas Corporation, to amend their current lease agreement to allow for rent abatement for the next phase of construction/improvements to Building No. 1083.** Dean Baldwin Painting, LP, is requesting rent abatement for construction of four to nine new office spaces, and the renovation and refurbishment of the management office spaces, which will involve new walls including sheet rock, HVAC, and electrical/phone/cable outlets. Dean Baldwin Painting is completing sheet metal wall covering in two of the Bays to provide a sealed environment and will supply the labor for the work. Dean Baldwin Painting is requesting to replace light assemblies in the bays and throughout the facility. After Asbestos testing, Dean Baldwin Painting will remove boilers with their maintenance and facilities engineer staff. Dean Baldwin Painting, LP, is requesting rent abatement not to exceed $136,713 in accordance with RIAC Rent Abatement Policy.

7. **Consider approval to authorize Integration, Innovation, Inc., an Alabama Corporation, to amend their current lease agreement to allow for rent abatement on modifications and improvements to the interior of Building No. 1000.** Integration, Innovation, Inc., is requesting rent abatement for the improvements to Building No. 1000. The tenant has begun to make approximately $100,000 in improvements using their own funds and the improvements will benefit the Landlord by increasing the value of the building. Integration, Innovation, Inc., is requesting rent abatement of 90% of the current rent, $1,236 per month, shall be given beginning September 1, 2016 through the end of the lease term, August 31, 2019, totaling $40,046.40. Rent beginning September 1, 2016 shall be $123.60 per month through August 31, 2019.

8. **Consider approval to authorize Birdman Air Enterprises, Inc., a New Mexico Corporation, the approval of Assignment of lease to CAVU Aerospace, Inc.** Birdman Air Enterprises, Inc., leases buildings No, 1770 and 733 for the purpose of an office and storage of tools and parts. The building space is 15,420 square feet. Birdman Air Enterprises, Inc., has been a customer since July 2008.

Resolution(s)

9. **Resolution 16-53 - Weeds** - The Resolution shall mandate the cleanup of approximately fifty (50) separate properties within the City.

10. **Resolution 16-54 - Condemnations** - The Resolution shall require the removal or demolition of six (6) dilapidated structures.

Minutes

11. **Consider approval of the following minutes -** June 27, 2016 Worksession, July 14, 2016 Regular City Council meeting, and the July 25, 2016 Special City Council meeting.

NEW BUSINESS / REGULAR ITEMS

Resolution(s)

12. **Resolution 16-47** - Consider approval of Resolution 16-47 regarding the design and construction of public restrooms in the downtown area.
Motioned by Councilor Best, seconded by Councilor Sandoval
Mr. Dillon discussed Resolution 16-47. There are two options for the design and construction of the public restrooms in the downtown area. Option "A" is the Conoco building renovation. Option "B" is to pre-fabricate the restroom at the Pioneer Plaza. The Infrastructure Committee recommended approval of Resolution 16-47 Attachment “A” on their July 18, 2016 regular meeting. Mayor Kintigh called for a roll call vote, stating that an "A" vote is to approve the Conoco building renovation, "B" vote is to approve pre-fabricating the restroom at the Pioneer Plaza and a "C" vote approves neither options.

    A roll call vote was as follows: Tabitha Denny - A, Steve Henderson - A, Jeanine Best - A, Jason Perry - C, Natasha Mackey - A, Art Sandoval - A, Caleb Grant - A, Juan Oropesa - A, Savino Sanchez - A.

    Vote: 8-1 Passed

    With Councilor Perry not voting for either option and Councilor Foster being absent.

13. **Resolution 16-55** – Consider approval of Resolution 16-55 which authorizes staff to submit a Community Development Block Grant application to the New Mexico Finance Authority.
Motioned by Councilor Best, seconded by Councilor Sandoval
Mr. Morris discussed Resolution 16-55. Five projects were presented and three of those five projects did not meet the requirements or intent of the CDBG program. The two proposed projects that do meet the intent and requirements of the CDBG program are as follows:

    - 6th, 7th and 8th Street Sidewalks
    - N. Garden Avenue between Country Club Road and 19th Street

    The Infrastructure Committee recommended approval of N. Garden Avenue, between 19th Street and Country Club Road for the full project. For the partial project the committee recommended approval of N. Garden Avenue, between 19th Street and Country Club Road, east side only.

    FOR THE RECORD: The Council vote is for the approval of the N. Garden Avenue project.

    Vote: 9 - 0 Passed

    With Councilor Foster being absent.

14. **Resolution 16-56** - Consider approval of Resolution 16-56 to authorize the City Manager to apply for, accept and execute a grant agreement(s) with the State of New Mexico Aviation Division for project development at the Roswell International Air Center (RIAC).
Motioned by Councilor Grant, seconded by Councilor Sandoval
Mr. Stark discussed Resolution 16-56 stating that the State of New Mexico requires the governing body to designate the City Manager to apply for, accept and execute grant agreement(s) and other documents requiring a signature for submittal to the State Aviation Division on behalf of the City of Roswell.

    Vote: 9 - 0 Passed

    With Councilor Foster being absent.

FOR THE RECORD: Councilor Foster joined the meeting at 6:47 p.m.

15. **Resolution 16-58** – Consider approval of Resolution 16-58 and the proposed Governing Body Rules of Order.
    Motioned by Councilor Sanchez, seconded by Councilor Grant
    Mr. Phillips discussed Resolution 16-58. The Governing Body Rules of Order is a procedural rule book by which the Mayor and Council govern themselves and allows for matters not contained within current laws, rules and regulations to be addressed. Due to multiple questions and concerns, Councilor Sanchez moved to table Resolution 16-58. Councilor Mackey was the second.

    Vote: 10 - 0 Passed

16. **Resolution 16-59** - Consider approval of Resolution 16-59 adopting and approving the Financial Policy for Cash Handling for the City.
    Motioned by Councilor Grant, seconded by Councilor Denny
    Ms. Garcia discussed Resolution 16-59. All departments that collect revenue for the City use their own developed policies and procedures. The Cash Handling Policy is a document that will be used by all city departments with regards to receipting, custody and deposit of revenues.

    Vote: 10 - 0 Passed

17. **Resolution 16-61** - Consider approval of Resolution 16-61, a resolution pertaining to vandalism and theft of political signs.
    Motioned by Councilor Perry, seconded by Councilor Foster
    Mr. Morris discussed Resolution 16-61 which states that the City Council condemns the vandalism and theft of political signs. Political signs are a fundamental part of the American electoral process. The vandalism and theft of these signs diminishes the electoral process.

    Vote: 9 - 1 Passed

    With Councilor Sanchez voting no.

Request(s)

18. **Consider approval to authorize General Airframe Support, Inc., an Arizona Corporation, a new lease agreement on an area of land.**
    Motioned by Councilor Grant, seconded by Councilor Denny
    Mr. Stark discussed General Airframe Support, Inc., which leases the area of land for the purpose of building a hangar. The area of land is 43,560 square feet. Rent amount is $250 monthly; $3,000 annually. The term is from August 1, 2016 through July 31, 2017.

    Vote: 10 - 0 Passed

19. **Public Safety Legal Services** - Consider the renewal of attorney Paul Sanchez's professional services agreement to provide public safety legal services. The agreement provides for three (3) renewals of one (1) year each. This would be the third and last remaining renewal option.
    Motioned by Councilor Sandoval, seconded by Councilor Foster
    Mr. Phillips discussed the renewal of attorney Paul Sanchez professional services agreement to provide public safety legal services. Mr. Sanchez provides professional legal services to the Police Department, Fire Department, Code Enforcement and Animal Control. He also serves as the City Prosecutor in municipal court, responds to motions filed in that court and appears and participates in hearings on those motions.

    FOR THE RECORD: Councilor Grant would like the contract to be brought to City Council in March 2017 for bid.

    Vote: 10 - 0 Passed

CLOSED SESSION

20. **Closed Session** - Pursuant to NMSA 1978 10-15-1H(2), to discuss limited personnel matters

concerning the appointment of an Interim City Manager.

The Council took a five minute recess at 7:22 p.m. and reconvened at 7:27 p.m. to go into closed session.

Motioned by Councilor Sanchez, seconded by Councilor Foster
A roll call vote was as follows: Tabitha Denny - yes, Barry Foster - yes, Steve Henderson - yes, Jeanine Best - yes, Jason Perry - yes, Natasha Mackey - yes, Art Sandoval - yes, Caleb Grant - yes, Juan Oropesa - yes, Savino Sanchez - yes.

Vote: 10 - 0 Passed

Councilor Sanchez stated that for the record the Council was back at 8:18 p.m. and they had a closed session pursuant to NMSA 1978, § 10-15-1H (2), to discuss limited personnel matters concerning the appointment of an Interim City Manager; no action was taken and no votes made.

FOR THE RECORD: All Council members were present.

Request(s)

21. **Consider a request to enter into an agreement with Strategic Government Resources (SGR) referencing an Interim City Manager.**
    Motioned by Councilor Grant, seconded by Councilor Foster
    Mr. Phillips discussed the agreement with Strategic Government Resources (SGR) referencing an Interim City Manager. This agreement would allow SGR to place an Interim City Manager until the position is permanently filled. The Finance Committee recommended approval at their August 4, 2016 meeting.

    Vote: 7 - 3 Passed

    With Councilors Henderson, Mackey and Oropesa voting no.

PUBLIC PARTICIPATION ON NON-AGENDA ITEMS

In order to speak you must sign up prior to the Council Meeting.

Adjournment

The meeting adjourned at 8:40 p.m.

Approved on this 9th day of September, 2016.

_____
DENNIS KINTIGH, MAYOR

_____
SHARON COLL, CITY CLERK

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 11.**
Meeting Date: 09/08/2016
COMMITTEE: Infrastructure
CONTACT: Louis Najar **CHAIR:** Jeanine Corn-Best

ACTION REQUESTED:

Resolution 16-57 - Consider the approval of Resolution 16-57 supporting the development of a concept plan for a new Game & Fish Department facility which may be constructed within the Old Municipal Airport. (Best/Morris)

BACKGROUND:

The New Mexico Department of Game and Fish has approached the City in looking at a potential concept plan to construct a new Game and Fish facility at the Old Municipal Airport. This facility would include a new building, warehouse, laydown yard, parking lot, an ATV training area, and fishing ponds. The area is located northwest of the intersection of College Boulevard and Montana Avenue. Attachment 1 shows the existing layout of land uses located in the subject area. Attachment 2 shows the very draft layout of uses that the Department of Game and Fish are considering. Staff has determined that there are several synergies at play between the City and Fish & Game with this concept, including expanded recreational opportunities close to the future recreation center to the south, and the need for additional drainage capacity in the Old Municipal Airport area.

Game & Fish needs a support resolution before funding the development of a concept plan.

FINANCIAL CONSIDERATION

Not applicable.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

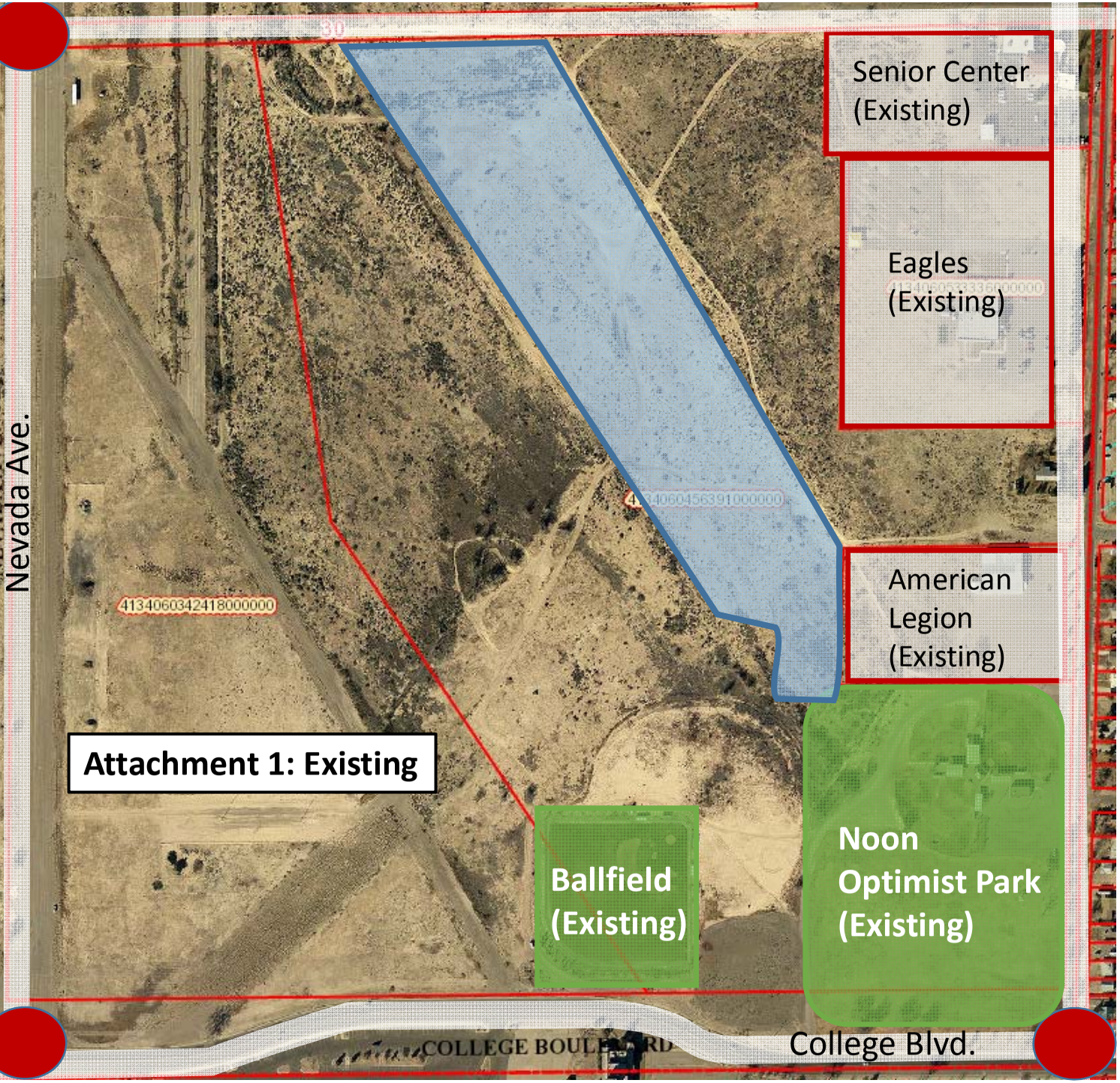
The Infrastructure Committee recommend approval (3-0) of Resolution 16-57 at their meeting on August 20, 2016.

STAFF RECOMMENDATION:

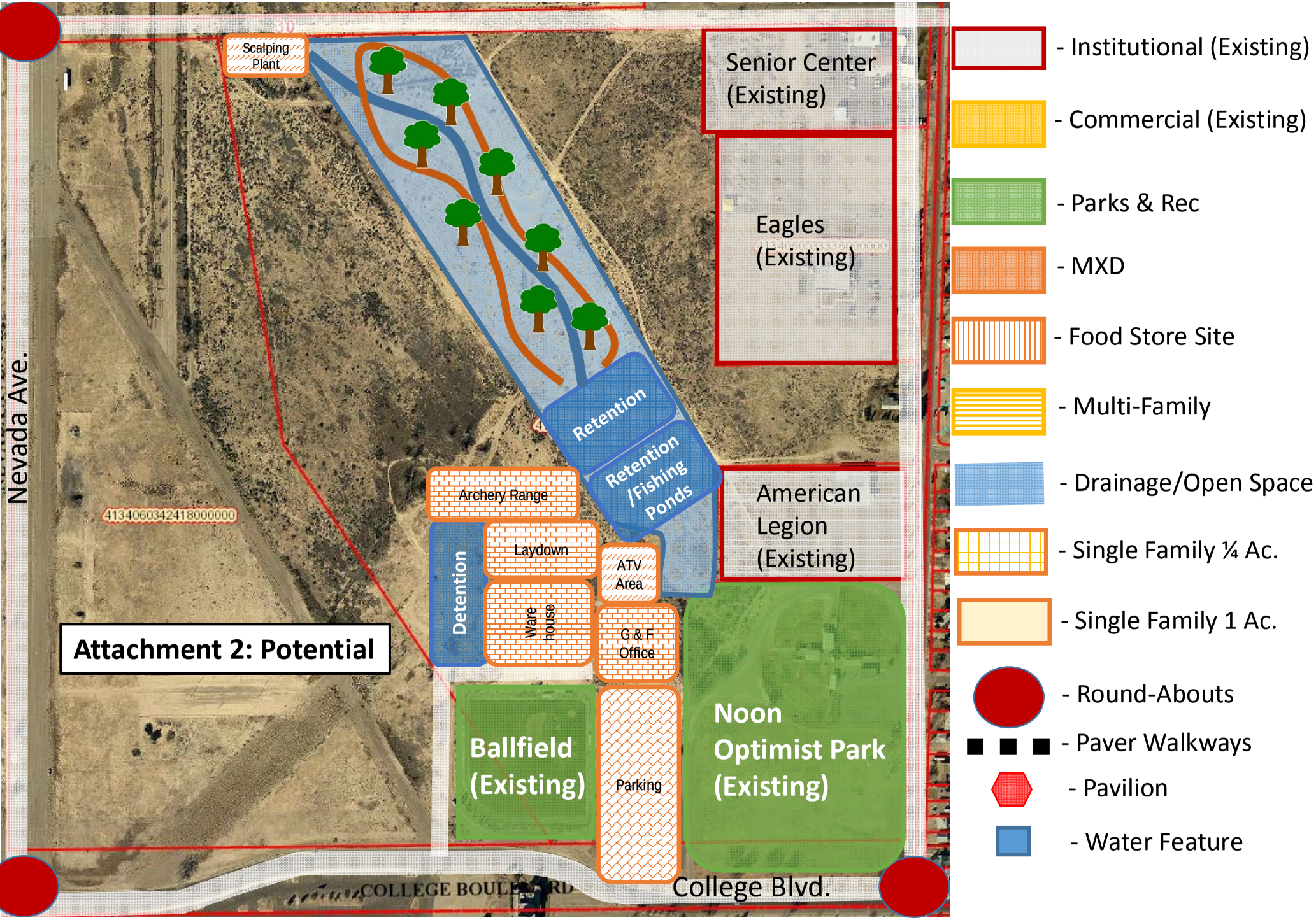
Consider the approval of Resolution 16-57 supporting the development of a concept plan for a new Game & Fish Department facility which may be constructed within the Old Municipal Airport.

Attachments

ATT 1 Resolution 16-57 Game and Fish
Resolution 16-57



- Institutional (Existing)
- Commercial (Existing)
- Parks & Rec
- MXD
- Food Store Site
- Multi-Family
- Drainage/Open Space
- Single Family ¼ Ac.
- Single Family 1 Ac.
- Round-Abouts
- Paver Walkways
- Pavilion
- Water Feature


Scalping Plant
Senior Center (Existing)
Eagles (Existing)
Retention
Retention /Fishing Ponds
Archery Range
Laydown
ATV Area
Detention
Ware house
G & F Office
American Legion (Existing)
Ballfield (Existing)
Parking
Noon Optimist Park (Existing)
Nevada Ave.
College Blvd.
Attachment 2: Potential
- Institutional (Existing)
- Commercial (Existing)
- Parks & Rec
- MXD
- Food Store Site
- Multi-Family
- Drainage/Open Space
- Single Family ¼ Ac.
- Single Family 1 Ac.
- Round-Abouts
- Paver Walkways
- Pavilion
- Water Feature

RESOLUTION 16-57

A RESOLUTION OF THE CITY OF ROSWELL SUPPORTING THE DEVELOPMENT OF A CONCEPT PLAN FOR A NEW GAME & FISH DEPARTMENT FACILITY WHICH MAY BE CONSTRUCTED WITHIN THE OLD MUNICIPAL AIRPORT.

WHEREAS, the City of Roswell owns property known as the Old Municipal Airport; and,

WHEREAS, the New Mexico Department of Game and Fish is assessing the utility of constructing a new facility near the northwest corner of College Boulevard and Montana Avenue; and,

WHEREAS, there are benefits to both the City and the Department of Game and Fish with respect to enhanced recreational activities and shared infrastructure improvements; and,

WHEREAS, the New Mexico Department of Game and Fish needs a resolution of support before commissioning the development of a concept plan for this facility.

BE IT RESOLVED BY THE CITY COUNCIL AS THE GOVERNING BODY OF THE CITY OF ROSWELL, NEW MEXICO:

Section 1. The City of Roswell supports the actions of the New Mexico Department of Game and Fish to develop a concept plan for the potential construction of a new facility within the Old Municipal Airport.

PASSED, ADOPTED, SIGNED AND APPROVED this 8TH day of September, 2016.

CITY SEAL

_____
Dennis Kintigh, Mayor

ATTEST:

_____
Sharon Coll, City Clerk

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 12.**
Meeting Date: 09/08/2016
COMMITTEE: Finance
CONTACT: Monica Garcia **CHAIR:** Caleb Grant

ACTION REQUESTED:

Resolution 16-64 - Consider approval of Resolution 16-64 requesting a deadline change to the Department of Finance Authority (DFA) for the final budget for the City of Roswell and for all New Mexico Municipalities. (Grant/Henderson/Garcia)

BACKGROUND:

New Mexico Department of Finance and the New Mexico State Auditor require New Mexico Municipalities to submit final budgets for the new year by July 31 each year. The deadline is burdensome and stressful for the municipalities due to the closing of the books, the Year-End Budget and the Quarterly Report which also have deadlines of July 31. Since the city's operating system is required to run cash accounting and not accrual we only have 31 days to meet these deadlines.

FINANCIAL CONSIDERATION

Not applicable.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

The Finance Committee recommend approval (3-0) at their meeting on September 1, 2016.

STAFF RECOMMENDATION:

Consider approval of Resolution 16-64 requesting a deadline change to the Department of Finance Authority (DFA) for the final budget for the City of Roswell and for all New Mexico Municipalities.

Attachments

Resolution 16-64 DFADeadline for final year end budget

RESOLUTION 16-64

A RESOLUTION OF THE CITY OF ROSWELL, NEW MEXICO, REQUSTING THAT THE DEADLINE CHANGE FOR THE FINAL BUDGET FOR NEW MEXICO MUNICIPALITIES

Whereas, the New Mexico Department of Finance Administration and the New Mexico State Auditor require New Mexico Municipalities to submit a final budget for the new year by July 31st each year; and

Whereas, New Mexico Municipalities have limited resources and personnel dedicated to finance and budget preparation; and

Whereas, the deadline, July 31st, required by the New Mexico Department of Finance Administration is burdensome and stressful for New Mexico Municipalities due to closing the accounting books for the previous year; and

Whereas, thirty-one days is not enough time for New Mexico Municipalities to close the books and compile a budget for the new year; and

Whereas, New Mexico Municipalities realize that the Department of Local Government, New Mexico Department of Finance Administration has a deadline of September 6th to review and submit Municipal budgets which causes a deadline crunch;

NOW, THEREFORE BE IT RESOLVED that the Ne Mexico Municipal League support reform in the budget deadline required and work with the New Mexico Department of Finance Administration and the New Mexico State Auditor to develop a plan that is acceptable to New Mexico Municipalities.

PASSED, ADDOPTED, SIGNED and APPROVED this 8th day of September, 2016.

_____

Dennis Kintigh, Mayor

CITY SEAL

ATTEST:

_____

Sharon Coll, City Clerk

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 13.**
Meeting Date: 09/08/2016
COMMITTEE: General Service
CONTACT: N/A **CHAIR:** Tabitha Denny

ACTION REQUESTED:

Resolution 16-65 - Consider approval of Resolution 16-65 which allows the United States Army Donations Program to donate a UH – 1H Huey Helicopter shell to the Douglas McBride Veterans Cemetery. (Denny/Tim Williams)

BACKGROUND:

The Douglas McBride Veterans Cemetery project began in 2014 and the project was completed in 2015. The masterplan site drawings display a retired military helicopter on exhibit to honor the Veterans who are laid to rest on the cemetery grounds.

FINANCIAL CONSIDERATION

Not applicable.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

The General Services Committee recommended approval (3-0) at their meeting on August 23, 2016.

STAFF RECOMMENDATION:

Consider approval of Resolution 16-65 which allows the United States Army Donations Program to donate a UH – 1H Huey Helicopter shell to the Douglas McBride Veterans Cemetery.

Attachments

Resolution 16-65 US Army -Huey Helicopter
ATT Huey Helicopter

RESOLUTION 16-65

A RESOLUTION AUTHORIZING THE UNITED STATE ARMY DONATIONS PROGRAM TO DISPLAY A UH-1H HUEY HELICOPTER SHELL AT THE CITY OF ROSWELL DOUGLAS MCBRIDE VETERANS CEMETERY AT SOUTH PARK.

WHEREAS, the City of Roswell will allow the United State Army Donations Program to display a U1-1H Huey Helicopter at the Douglas McBride Veterans Cemetery; and

WHEREAS, the City of Roswell who is the land owner of the Douglas McBride Veteran meets the requirement of being authorized to display the Huey Helicopter on the premises; and

NOW, THEREFORE be it resolved by the governing body of the City Council of Roswell, New Mexico:

That the City of Roswell will allow the Untied State Army Donations Program to display a Huey Helicopter at the Douglas McBride Veterans Cemetery by the necessary documents and forms to execute endeavor.

PASSED, ADOPTED, SIGNED AND APPROVED the 8th day of September 2016.

_____
Dennis Kintigh, Mayor

CITY SEAL

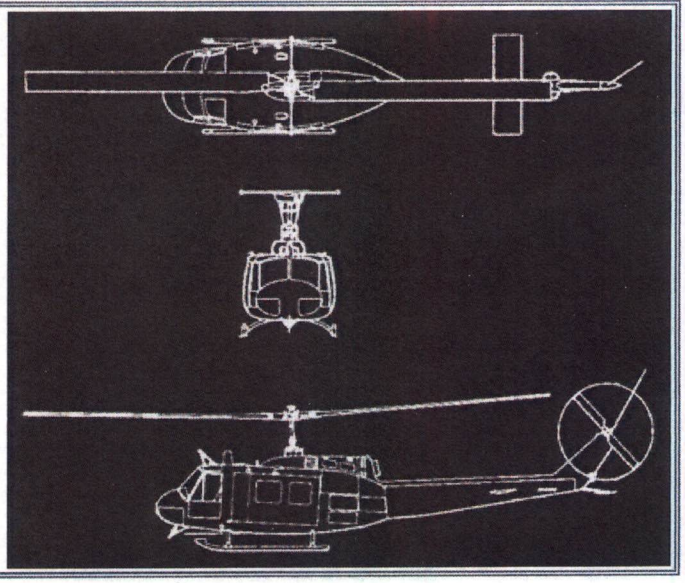
ATTEST:

_____
Sharon Coll, City Clerk


140
UNITED STATES ARMY

The Discovery Channel reports that there were approximately 12,000 UH-1 "Hueys" involved in the Vietnam conflict, from start to finish, and that approximately 6,000 were lost or damaged during the conflict. This is the helicopter that we flew.

Designation: UH-1H Iroquois (Huey)
Manufacturer: Bell Helicopter, Fort Worth, Texas
Main Rotor Span: 48 ft 3.2 inches
Tail Rotor Span: 8 ft 6 in
Length: 57 ft 0.67 inches (rotors turning)
Fuselage Length: 41 ft 5 inches
Skid Width: 8 ft 6.6 inches
Height to top of mast: 13 ft 7.4 in
Max Speed: 124 knots forward, 30 kts sideward & 30 knots rearward
Max Gross Weight: 9500 lbs
Engine: Lycoming T53-L-13 turbine engine, 1300 shp (shaft horse power)
Fuel: 206.5 gal JP-4
Flight Duration: 3 hrs
Crew (Vietnam): Pilot, Copilot, Crew Chief and Door Gunner
Passengers: 9



United States Army Donations Program
Qualification Checklist for Donation of Combat Materiel
Veterans' Service Organizations

Please complete the following questionnaire and return this form with the required documents outlined below:

Full Name of Organization (ORG): _____

ORG Physical Address: _____

City: _____ State: _____ Zip Code: _____

Telephone Number: _____ FAX Number: _____

ORG E-mail Address: _____

ORG Mailing Address (if different than above): _____

City: _____ State: _____ Zip Code: _____

ORG Representative (REP): _____

Contact Information (If Different than above), Telephone Number: _____

Contact E-mail Address (If Different than above): _____

Name of Organization that owns the display site: _____

Address of Display site (if different from ORG): _____

City: _____ State: _____ Zip Code: _____

GPS Display Site Coordinates: _____

Type of Combat Equipment being requested (**check only one**):

☐ Tracked Vehicle ☐ Towed Artillery ☐ Helicopter ☐ Any Combat Material

Size Restrictions, maximum Length and Width: _____ Feet x _____ Feet

Do you currently possess combat equipment as static display? _____ Yes _____ No

_____ _____
REP's Signature Date

United States Army Donations Program
Qualification Checklist for Donation of Combat Materiel
Veterans' Service Organizations Continued

Please read the following conditions and initial after each.

Combat Material issued to your organization cannot be loaned, sold, transferred, given to or used by any other organization. This equipment remains the property of the United States Government and must be returned to the US Army when no longer needed by your organization. _____ (Initial)

Upon receipt and approval of your application, you will be offered a suitable display piece as they become available. The availability of any Army equipment for use as a static display is very limited. It is recommended you apply for a static piece in order to maintain your request in an open status until an asset becomes available. _____ (Initial)

Upon acceptance of an item, your organization will be responsible for all release, demilitarization, display site preparation and transportation costs associated with the conditional loan of display equipment. Depending upon the type of equipment available: demilitarization, radiological and release costs can exceed several thousand dollars. _____ (Initial)

Please identify **maximum dollar amount** that you are prepared to pay for demilitarization/radiological and release costs (**check one**):

☐ Not to Exceed $1000 ☐ Not to Exceed $10,000 ☐ Exceeds $10,001

Transportation of an item will be at your expense via a commercial carrier. Combat equipment can be located throughout the Continental United States of America, distance from current location to display site will vary. This cost will be dependent upon the commercial carrier you hire to move the item for you and the distance from its current location to your display site. _____ (Initial)

Due to the distance combat equipment may have to be transported and associated costs, please identify the distance your organization is willing to consider for an offer (**check one**): ☐ With-in State ☐ With-in Region ☐ No prohibition on distance

In the event that an offer for combat equipment is not made within a three year period from the date of this request or an offer is made and refused by the organization, the organization must reapply for qualification of combat material under this program. _____ (Initial)

United States Army Donations Program
Qualification Checklist for Donation of Combat Materiel
Veterans' Service Organizations Continued

Retain this page for your records.

Please submit the following information to:

US Army TACOM Life Cycle Management Command
ATTN: AMSTA-LCL-IWD, M/S: 419D
6501 E. 11 Mile Road
Warren, MI 48397-5000

(1) **Checklist** for Donations of Combat Materiel Veterans' Organizations. (Pages 1&2)

(2) **Veteran Service Organization Written Request** for combat equipment under 10 USC 2572 signed by the local commander, commandant, or president of the organization.

(3) **National Headquarters' Endorsement Letter**. Send your written request for combat equipment to your national headquarters office. National headquarters is required to verify your organization is in good standing. The national headquarters office will send their verification letter along with your written request to the Army Donations Program at TACOM for processing.

(4) **Ceremonial Rifle Inventory.** List all rifles by model, manufacturer, and serial number. If your organization does not have any weapons, write "NONE" on line 1 of this form (page one). Sign your name on the second page and have the form notarized.

(5) **Privacy Act Notice**.

(6) **Annual Certification of Army Material Status**. Complete for each piece of equipment currently in the organization's possession.

(7) **Site photograph(s)**. These photograph(s) must show where you intend to place the display item. It must include surrounding landmarks including your facility or the Park signs and setting.

(8) **Static Display Photograph(s).** Photograph(s) must clearly show any display equipment your organization received. This includes display items located in parks and cemeteries or at memorial sites.

(9) **Map of the Local Area/GPS Coordinates.** This map must pinpoint the location of your organization's proposed display site. It must be detailed enough to permit visitors and/or inspectors unfamiliar with the local area to easily find the display.

(10) **Land Owner Approval.** If the display will be located on municipal property, you are required to provide a copy of the board approval (i.e. council minutes or resolution) from the City/Township Council, County Board of Commissioners, and/or other appropriate law making governing body. This document will state the governing body will allow the placement of the Army asset on publicly owned land. Equipment cannot be placed on privately owned property.

March 2012.

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 14.**
Meeting Date: 09/08/2016
COMMITTEE: General Service
CONTACT: N/A **CHAIR:** Tabitha Denny

ACTION REQUESTED:

RFP 16-010 - Consider approval of RFP 16-010 for staff to move forward with negotiations, cost analysis and contract terms for finalization to award a contract to Kemper Sports Management to operate and maintain the Nancy Lopez Golf Course at Spring River. (Denny/Tim Williams)

BACKGROUND:

Nancy Lopez Golf Course at Spring River operations are executed through a management contract. The current contract expires on March 1, 2017. The City moved forward by advertising a RFP to invite golf management firms across the country to propose operating the Nancy Lopez Golf Course at Spring River. Five golf management firms applied for the opportunity to manage the contract. All five firms were interviewed the week of August 8, 2016. The search committee scored Kemper Sports Management the highest based on the submitted proposals, qualifications and management fee totals.

FINANCIAL CONSIDERATION

Financials will be considered once negotiations are completed.

LEGAL REVIEW:

The previous City Attorney reviewed RFP – 16-010 legal terms.

BOARD AND COMMITTEE ACTION:

The General Services Committee recommended approval (3-0) at their meeting on August 23, 2016.

STAFF RECOMMENDATION:

Consider approval of RFP 16-010 for staff to move forward with negotiations, cost analysis and contract terms for finalization to award a contract to Kemper Sports Management to operate and maintain the Nancy Lopez Golf Course at Spring River.

Attachments

RFP 16-010 Golf Course Operations and Maintenance

July, 2016

Golf Course Operations Management

Nancy Lopez Golf Course at Spring River

RFP-16-010

KemperSports

ROSWELL ALL-AMERICA CITY

Executive Summary

On behalf of KemperSports, I am excited to present our capabilities and experience to provide professional golf management services to the City of Roswell, which would include maintenance of Nancy Lopez Golf Course at Spring River. We are genuinely excited to showcase our professional knowledge, evaluate the current operations of the golf course and deliver our professional management services offering recommendations on strengthening the business model and increasing revenues for the facility.

KemperSports has been partnering with government and municipal agencies for nearly 40 years providing a creative and customized approach to each facility that addresses their specific goals and objectives. As a current partner with **38 municipalities** we understand the attention to detail required to provide best management practices while delivering a high quality experience that the entire community of Roswell can be proud of each and every day. Our hands-on, client-centric management approach is the cornerstone of our success. Nancy Lopez Golf Course at Spring River will benefit from our experience with similar operations, proven operational guidelines and strategies to maximize the operation. It's our people and their passion for what we do every day that has led so many municipal organizations to trust us with their golf assets and operations.

Based on our experience, as well as the criteria stated in the RPF and our tour of the facility we have identified the following specific areas that are key during the evaluation process with the City of Roswell:

- ***Partner with an operator that has all-encompassing experience in managing expenses and revenues while delivering a premier golf experience for residents and guests of Roswell***
- ***Improving the revenue production of the golf course, in all areas, to reduce the financial burden which exists today and work towards financial stability.***
- ***Lease Golf Carts to the facility and provide the City a larger portion of the revenues***
- ***Develop an extensive marketing plan and brand awareness which will capture the local residents to the golf course and drive additional rounds and provide quality food and beverage to the facility***
- ***Create an awareness of the "Best in Class" golf experience for the Roswell community while delivering consistent and accurate financial reporting to City representatives***

During the next four years, with the support and guidance from City representatives, KemperSports will make achieving these goals our top priority along with implementing our other industry leading management best practices.

Understanding the dynamics of running a leading golf operation in similar location while efficiently monitoring the top and bottom line expenses is essential in selecting a successful operator. We are experts on managing golf shops and providing instruction to all players' capabilities while consistently achieving our client's goals. For example, in El Paso, at Butterfield Trail Golf Club we have grown revenues through innovative tournament sales strategies, player development programs and delivering award winning customer service.

Diversifying the property and identifying other areas to generate revenue including private events, social gatherings and other non-golf related revenues are crucial to the long term sustainability of the facility. We recognize the dynamic marketing efforts needed to incorporate revenue opportunities for both the local residents and guest to Roswell by targeting efforts to grow awareness in both New Mexico and regionally. Several sales and marketing initiatives, along with increased brand awareness, will be implemented immediately. These initiatives include: strengthening existing relationships and building new partnerships within the Roswell community, the introduction of a customized loyalty program and the development of new and exciting events for residents. These programs, such as hosting 'Resident Appreciation Months' are concentrated on giving back to the primary golfers and residents that continue to utilize Nancy Lopez Golf Course at Spring River. KemperSports will implement our programs and sharing best practices from our "Center of Excellence" – our digital library of customizable marketing, advertising and public relations strategies which help create Best in Class operations across all of our golf facilities.

Our client centric management approach focusses on making the golf course and City of Roswell the "Star". We will create an individual operating model flexible and specific to the City of Roswell's long term goals for quality of life ammenities. Delivering consistent communication and providing expert guidance to the City is our goal while making Nancy Lopez Golf Course at Spring River a true community asset.

Thank you again for allowing KemperSports the opportunity to submit our proposal for your consideration to manage full operations at Nancy Lopez Golf Course at Spring River.

POINTS FOR:

RFP-16-010

Nancy Lopez Golf Course at Spring River Operations Management

	HCB ENTERPRISES		KEMPERSPORTS MANAGEMENT		LANDSCAPES MANAGEMENT COMPANY		OLIPHANT HALTOM GOLF, LLC		MILESTONE MANAGEMENT	
	Points	Rank	Points	Rank	Points	Rank	Points	Rank	Points	Rank
Reviewer #1	86	5	130	1	130	1	111	2	87	3
Reviewer #2	113	5	144	1	143	2	141	3	116	4
Reviewer #3	105	5	147	1	139	2	130	3	113	4
Reviewer #4	76	5	150	1	144	2	136	3	104	4
TOTAL	380	5	571	1	556	1.75	518	2.75	420	3.75
AVG.	95	5	142.75	1	139	1.75	129.5	2.75	105	3.75

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 15.**
Meeting Date: 09/08/2016
COMMITTEE: Infrastructure
CONTACT: Louis Najar **CHAIR:** Jeanine Corn-Best

ACTION REQUESTED:

Proposed Ordinance 16-18 Affordable Housing Plan – Consider approval to advertise for a public hearing to be held at the Regular City Council meeting on October 13, 2016. (Best/Morris)

BACKGROUND:

Proposed Ordinance 16-18 will allow the City of Roswell to engage in all of the affordable housing strategies and programs that are included in the City's adopted Affordable Housing Plan.

This item has been review by the Mortgage Finance Committee which responded with 4 minor recommended changes which staff has incorporated into the draft Ordinance 16-18. Final MFA approval was received August 13, 2016.

FINANCIAL CONSIDERATION

There are no fiscal issues at this time with the adoption of the Proposed Ordinance.

LEGAL REVIEW:

The contract City Attorney has reviewed Proposed Ordinance 16-18 and was approved by the Mortgage Finance Authority on August 13, 2016.

BOARD AND COMMITTEE ACTION:

The Infrastructure Committee recommended approval of Proposed Ordinance 16-18 (3-0) at their meeting on August 15, 2016.

STAFF RECOMMENDATION:

Consider approval to advertise for a public hearing to be at the Regular City Council meeting on October 13, 2016.

Attachments

Proposed Ordinance 16-18

PROPOSED ORDINANCE NO. 16-18

AN ORDINANCE ESTABLISHING AN AFFORDABLE HOUSING PROGRAM PURSUANT TO THE AFFORDABLE HOUSING ACT; DEFINING TERMS; ESTABLISHING APPLICATION REQUIREMENTS AND REVIEW CRITERIA; AND ESTABLISHING PROCEDURES TO ADMINISTER AN AFFORDABLE HOUSING PROGRAM, AND PROVIDING FOR AN EFFECTIVE DATE AND SEVERABILITY.

WHEREAS, The City of Roswell, New Mexico (the "City") is a unit of local government under the laws of the State of New Mexico (the "State"); and,

WHEREAS, under an exception to the "anti-donation" clause) as set forth in Article IX, §14 of the New Mexico Constitution, the City is not prohibited from:

A. Donating or otherwise providing or paying a portion of the costs of land for the construction on it of affordable housing, or;

B. Donating or otherwise providing or paying a portion of the costs of construction or renovation of affordable housing, or the costs of conversion or renovation of buildings into affordable housing, or;

C. Providing or paying the costs of financing or infrastructure necessary to support affordable housing projects; and,

D. Donating or otherwise paying a portion of the costs of acquisition, development, construction, financing and operating or owning affordable housing.

WHEREAS, the Affordable Housing Act, NMSA 1978 § 6-27-1 *et seq.* (the "Act") implements the provisions of Subsections E and F of Section 14 of Article 9 of the New Mexico Constitution; and,

WHEREAS, the City Council ("Council"), the governing body of the City of Roswell, desires to implement an affordable housing program for the City; and,

WHEREAS, the City Council has adopted an Affordable Housing Plan (Resolution 16-41) pursuant to the Act and the New Mexico Mortgage Finance Authority Affordable Housing Act Rules ("Rules"); and,

WHEREAS, this Ordinance has been drafted in accordance with the Affordable Housing Plan; and,

WHEREAS, the New Mexico Mortgage Finance Authority (MFA) has reviewed and approved the Plan and the form and terms of this Ordinance prior to final adoption hereof.

NOW THEREFORE, be it ordained by the governing body of the City of Roswell, State of New Mexico:

Section 1. SHORT TITLE.

This article may be cited as the "City of Roswell Affordable Housing Ordinance."

Section 2. PURPOSE.

This ordinance is adopted to implement the City of Roswell Affordable Housing Plan. In accordance with the N.M. Constitution, Article IX, §14, the Affordable Housing Act, NMSA 1978, §6-27-1 *et seq.* (the "Act") and MFA Rules, the purpose of the Affordable Housing Ordinance is to:

A. Establish procedures to ensure that State and local housing assistance grantees are Qualifying Grantees who meet the requirements of the Act and the Rules promulgated pursuant to the Act both at the time of the award and throughout the term of any grant or loan under the Program;

B. Establish an application and award timetable for State housing assistance grants or loans to permit the selection of the Qualifying Grantee(s) by the City of Roswell.

C. Create an evaluation process to determine in conjunction with the MFA:

1. The financial and management stability of the Applicant;

2. The demonstrated commitment of the Applicant to the community;

3. A cost-benefit analysis of the project proposed by the Applicant;

4. The benefits to the community of a proposed project;

5. The type or amount of assistance to be provided;

6. The scope of the Affordable Housing Project;

7. Any substantive or matching contribution by the Applicant to the proposed project;

8. A performance schedule for the Qualifying Grantee with performance criteria; and

9. Any other rules or procedures the City believes are necessary for a full review and evaluation of the Applicant and the Application or which MFA believes is necessary for a full review of the City’s evaluation of the Applicant;

D. Require long-term affordability of the City’s Affordable Housing Projects so that a project cannot be sold shortly after completion and taken out of the affordable

housing market;

E. Require that a grant or loan for a project must impose a contractual obligation on the Qualifying Grantee that the affordable housing units in any project be occupied by persons of low or moderate income as defined in this Ordinance;

F. Provide for adequate security against the loss of public funds or property in the event that the Qualifying Grantee abandons or otherwise fails to complete the project;

G. Require review and approval of a housing grant project budget by the City and/or the MFA before any expenditure of grant funds or transfer of granted property;

H. Require that a condition of grant or loan approval be proof of compliance with all applicable State and local laws, rules and ordinances;

I. Provide definitions for “low-income” and “moderate-income" and set out requirements for verification of income levels; and

J. Require that the City enter into a contract with the Qualifying Grantee consistent with the Act, which contract shall include remedies and default provisions in the event of the unsatisfactory performance by the Qualifying Grantee and which contract shall be subject to the review of the MFA in its discretion;

Section 3. DEFINITIONS.

The following words and terms shall have the following meanings.

"Act" shall mean the Affordable Housing Act, NMSA 1978, §6-27-1 *et seq*.

"Affordability Period" shall mean:

1. If the fair market value of any Housing Assistance Grant or the total amount of Affordable Housing Funds that have been awarded, loaned, donated, or otherwise conveyed to the Qualifying Grantee is from one dollar ($1.00) to fourteen thousand nine hundred ninety nine dollars and ninety nine cents ($14,999.99), then the Affordability Period shall be not less than five (5) years.

2. If the fair market value of any Housing Assistance Grant or the total amount of Affordable Housing Funds is from fifteen thousand dollars ($15,000.00) up to and including forty thousand dollars ($40,000.00), then the Affordability Period shall be not less than ten (10) years.

3. If the fair market value of any Housing Assistance Grant or the total amount of Affordable Housing Funds is from forty thousand dollars ($40,000.00) up to and including one hundred thousand dollars ($100,000.00), then the Affordability Period shall be not less than fifteen (15) years.

4. If fair market value of any Housing Assistance Grant or the total amount of Affordable Housing Funds is greater than one hundred thousand dollars ($100,000.00), the Affordability Period shall be not less than twenty (20) years.

"Affordable" shall mean consistent with minimum rent and/or income limitations set forth in the MFA Act and in guidelines established by MFA.

"Affordable Housing" means residential housing primarily for persons or households of low or moderate income.

"Affordable Housing Funds" shall mean any or all funds awarded or to be awarded, loaned or otherwise distributed under the Act.

"Affordable Housing Plan" or "Plan" shall mean a plan pursuant to detailed research and analysis of the community and housing profile, including a review of land use and policy regarding land use, which produces a housing needs assessment for low and moderate income households in that locality.

"Affordable Housing Program" or "Program" shall mean any programs the City establishes pursuant to the Act and based on the findings of the approved City of Roswell Affordable Housing Plan.

"Affordable Housing Project" or "Project" shall mean any work or undertaking, whether new construction, acquisition of existing Residential Housing, remodeling, improvement, rehabilitation or conversion, which may be developed in one or more phases, as approved by the City and/or MFA for the primary purposes as allowed by the Act and in compliance with the findings of the City of Roswell Affordable Housing Plan.

“Applicant" shall mean an individual, a governmental housing agency, regional housing authority, a for-profit organization, including a corporation, limited liability company; partnership, joint venture, syndicate, or association or a nonprofit organization meeting the appropriate criteria set by the City and/or MFA.

“Application" shall mean an application to participate in one or more Affordable Housing Projects or Programs under the Act submitted by an Applicant to the City.

"Builder" shall mean an individual or entity licensed as a general contractor to construct Residential Housing in the State that satisfies the requirements of a Qualifying Grantee and has been approved by the City and/or MFA to participate in an Affordable Housing Program. The term "Builder" shall also include an individual or entity that satisfies the requirements of a Qualifying Grantee and has been approved by the City and/or MFA to participate in an Affordable Housing Program, who is not licensed as a general contractor in the State, provided such individual or entity contracts with a general contractor licensed in the State to construct Residential Housing.

"Building" shall mean a structure capable of being renovated or converted into Affordable Housing or a structure that is to be demolished and is located on land donated for use in connection with an Affordable Housing Project.

"Congregate Housing Facility" shall mean Residential Housing designed for occupancy by more than four Persons of Low or Moderate Income living independently of each other. The facility may contain group dining, recreational, health care or other communal living facilities and each unit in a Congregate Housing Facility shall contain at least its own living, sleeping, and bathing facilities.

"City" shall mean the City of Roswell, New Mexico, a unit of local government under the Constitution and laws of the State of New Mexico.

"Federal Government" shall mean the United States of America and any agency or instrumentality, corporate or otherwise, of the United States of America.

"Household" shall mean one or more persons occupying a housing unit.

"Housing Assistance Grant" means the donation, provision or payment by the City of:

1. Land upon which affordable housing will be constructed; or,

2. An existing Building that will be renovated, converted or demolished and reconstructed as Affordable Housing; or,

3. The costs of acquisition, development, construction, financing, and operating or owning affordable housing; or,

4. The costs of financing or infrastructure necessary to support Affordable Housing.

"HUD" shall mean the United States Department of Housing and Urban Development.

"Infrastructure" shall mean Infrastructure Improvements and Infrastructure Purposes.

"Infrastructure Improvement" includes, but is not limited to:

1. Sanitary sewage systems, including collection, transport, storage, treatment, dispersal, effluent use and discharge;

2. Drainage and flood control systems, including collection, transport, diversion, storage, detention, retention, dispersal, use and discharge;

3. Water systems for domestic purposes, including production, collection, storage, treatment, transport, delivery, connection and dispersal;

4. Areas for motor vehicle use for road access, ingress, egress and parking;

5. Trails and areas for pedestrian, equestrian, bicycle or other non-motor vehicle use

for access, ingress, egress and parking;

6. Parks, recreational facilities and open space areas for the use of residents for entertainment, assembly and recreation;

7. Landscaping, including earthworks, structures, plants, trees and related water delivery systems;

8. Electrical transmission and distribution facilities;

9. Natural gas distribution facilities;

10. Lighting systems;

11. Cable or other telecommunications lines and related equipment;

12. Traffic control systems and devices, including signals, controls, markings and signs;

13. Inspection, construction management and related costs in connection with the furnishing of the items listed in this subsection; and

14. Heating, air conditioning and weatherization facilities, systems or services, and energy efficiency improvements that are affixed to real property.

"Infrastructure Purpose" shall mean:

1. Planning, design. engineering, construction, acquisition or .installation of Infrastructure, including the costs of applications, impact fees and other fees, permits and approvals related to the construction, acquisition or installation of the Infrastructure, provided the City may determine it appropriate to reduce or waive building permit fees, sewer and water hook-up fees and other fees with respect to an Affordable Housing Project for which Affordable Housing Funds and/or Housing Assistance Grants are awarded, loaned, donated or otherwise distributed under the Act;

3. Acquiring, converting, renovating or improving existing facilities for Infrastructure, including facilities owned, leased or installed by the owner;

4. Acquiring interests in real property or water rights for Infrastructure, including interests of the owner; and,

5. Incurring expenses incident to and reasonably necessary to carry out the purposes specified in this subsection.

"MFA" shall mean the New Mexico Mortgage Finance Authority.

"MFA Act" shall mean the Mortgage Finance Authority Act, enacted as Chapter 303 of the Laws of 1975 of the State of New Mexico, as amended (being Sections 58-18-1 through 58-18~27, inclusive, N.M.S.A (1978), as amended).

"Mortgage" shall mean a mortgage, mortgage deed, deed of trust or other instrument creating a lien, subject only to title exceptions as may be acceptable to the City and/or the MFA, on a fee interest in real property located within the State or on a leasehold interest that has a remaining term at the time of computation that exceeds or is renewable at the option of the lessee until after the maturity day of the Mortgage Loan.

"Mortgage Lender" shall mean any bank or trust company, mortgage company, mortgage banker, national banking association, savings bank, savings and loan association, credit union, building and loan association and any other lending institution; provided that the mortgage lender maintains an office in the State, is authorized to make mortgage loans in the State and is approved by the City and/or the MFA and either the Federal Housing Authority, Veterans' Affairs, Federal National Mortgage Association (now known as Fannie Mae), or Federal Home Loan Mortgage Corporation.

"Mortgage Loan" shall mean a financial obligation secured by a Mortgage, including a Mortgage Loan for a Project.

"Multiple Family Housing Project" shall mean Residential Housing that is designed for occupancy by more than four persons or families living independently of each other or living in a Congregate Housing Facility, at least eighty percent (80%) of whom are Persons of Low or Moderate Income, including without limitation Persons of Low or Moderate Income who are elderly and handicapped as determined by the City and/or the MFA, provided that the percentage of low-income persons and families shall be at least the minimum, if any, required by federal tax law.

"Multi-Family Housing Program" shall mean a program involving a Congregate Housing Facility, a Multiple Family Housing Project or a Transitional Housing Facility.

"Persons of Low or Moderate Income" shall mean persons and families who are determined to lack sufficient income to pay enough to cause private enterprise to build an adequate supply of decent, safe and sanitary residential housing in the City and whose incomes are below the income levels established by MFA and the Plan to be in need of the assistance made available by the Act, taking into consideration, without limitation, such factors as defined under the Act. For purposes of this definition, the word "families" shall mean a group of persons consisting of, but not limited to, the head of a household; his or her spouse, if any; and children, if any, who are allowable as personal exemptions for Federal income tax purposes. In accordance with the Plan, persons of low and moderate income who are eligible for assistance are as follows:

1. Persons of low income shall mean persons in households with annual gross incomes below 80% of Area Median Income for the City as approved and published each year by MFA and verified by the City.

2. Persons of Moderate Income shall mean persons in households with annual gross incomes between 80% and 100% of Area Median Income for City as approved and published each year by MFA and verified by the City.

3. For purposes of this definition, “annual gross income” shall mean the annual anticipated income from assets, regular cash or noncash contributions, and any other resources and benefits determined to be income by HUD, as defined in 24 CFR Section 5.609.

"Ordinance" shall mean this Ordinance (No.16-18).

"Policies and Procedures” shall mean Policies and Procedures of the MFA, including but not limited to, Mortgage Loan purchasing, selling, servicing and reservation procedures, which the MFA may update and revise from time to time as the MFA deems appropriate.

"Public Service Agencies” shall include, but are not limited to, any entities that support Affordable Housing and which believe that the program or project proposed by the Applicant is worthy and advisable, but which are not involved, either directly or indirectly, in the Affordable Housing Program or Project for which the Applicant is applying.

"Qualifying Grantee" means:

1. An individual who is qualified to receive assistance pursuant to the Act and is approved by the City; and

2. A governmental housing agency, regional housing authority, corporation, a limited liability company, partnership, joint venture, syndicate, association or a nonprofit organization that:

    a. Is organized under State or local laws and can provide proof of such organization;

    b. If a non-profit organization, has no part of its net earnings inuring to the benefit of any member, founder, contributor, or individual; and

    c. Is approved by the City.

"Recertification" shall mean the recertification of Applicants and/or Qualifying Grantees participating in any Affordable Housing Programs or in any programs under the Act as determined necessary from time to time by the City and/or MFA.

"Rehabilitation" shall mean the substantial renovation or reconstruction of an existing single-family residence or a Multi-Family Housing Project, which complies with requirements established by MFA. Rehabilitation shall not include routine or ordinary repairs, improvements or maintenance, such as interior decorating, remodeling or

exterior painting, except in conjunction with other substantial renovation or reconstruction.

"Residential Housing" shall mean any Building, structure or portion thereof that is primarily occupied, or designed or intended primarily for occupancy, as a residence by one or more Households and any real property that is offered for sale or lease for the construction or location thereon of such a building, structure or portion thereof. This can also include congregate housing, manufactured homes and housing intended to provide or providing transitional or temporary housing for homeless persons.

"Residential Use" shall mean that the structure or the portion of the structure to benefit from the Affordable Housing Funds or Housing Assistance Grant is designed primarily for use as the principal residence of the occupant or occupants and shall exclude vacation or recreational homes.

"RFP" shall mean any request for proposals made by the City.

"Rules" shall mean the New Mexico Mortgage Finance Authority Affordable Housing Act Rules adopted pursuant to Section 6-27-8(B) NMSA 1978.

"State" shall mean the State of New Mexico.

"Transitional Housing Facility" shall mean residential housing designed for temporary or transitional occupancy by Persons of Low or Moderate Income or special needs.

Section 4. GENERAL REQUIREMENTS.

The following requirements shall apply to all Housing Assistance Grants and/or Affordable Housing Funds awarded, loaned or otherwise distributed by the City under the Act to a Qualifying Grantee.

A. **Request for Proposals.** The City, in its discretion, may issue one or more RFPs to solicit applications from Applicants or shall otherwise identify a Qualifying Grantee for the use of any Affordable Housing Funds or Housing Assistance Grants to be awarded, loaned, donated or otherwise distributed under the Act.

B. **Applicant Eligibility.** The following Applicants are eligible under the Act to apply for Affordable Housing Funds or a Housing Assistance Grant to provide housing or related services to Persons of Low or Moderate Income in the community:

(i) All individuals who are qualified to receive assistance pursuant to the Act, the Rules, and this Ordinance that are approved by the City;

(ii) All regional housing authorities and any governmental housing agencies;

(iii) All for-profit organizations, including any corporation, limited liability

company, partnership, joint venture, syndicate or association;

(iv) All non-profit organizations meeting the following requirements:

(a) A primary mission of the nonprofit organization must be to provide housing or housing-related services to Persons of Low or Moderate Income; and

(b) The non-profit organization must have received its 501(c)(3) designation prior to submitting an Application;

(c) Have no part of its net earnings inuring to the benefit of any member, founder, contributor, or individual;

(v) All non-individual Applicants must:

(a) Be organized under State or local laws and can provide proof of such organization and be approved by the City; and,

(b) Have a functioning accounting system that is operated in accordance with generally accepted accounting principles or has designated an entity that will maintain such an accounting system consistent with generally accepted accounting principles; and,

(c) Have among its purposes significant activities related to providing housing or services to Persons or Households of Low or Moderate Income; and,

(d) Have no significant outstanding or unresolved monitoring findings from the City, MFA, or its most recent independent financial audit, or if it has any such findings, it has a certified letter from the City, MFA, or auditor stating that the findings are in the process of being resolved.

C. Applications.

(i) Process for Applying. Applicants wishing to apply for a Housing Assistance Grant, including the use of any Affordable Housing Funds, or to participate in any Affordable Housing Program are required to submit to the City the following (as applicable):

(a) One original Application together with all required schedules, documents, or such other information which may be required by the City or in any RFP which may have been issued by the City;

(b) A proposal describing the nature and scope of the Affordable

Housing Project proposed by the Applicant and for which the Applicant is applying for funds or a grant under the Act, and which documents the need for the requested funds or grant, describes the type and/or amount of assistance which the Applicant proposes to provide to Persons of Low or Moderate Income and documents the consistency of the proposal with the City's Affordable Housing Plan;

(c) Executive summary and project narrative(s) that address the evaluation criteria set forth in any RFP issued by the City for the Affordable Housing Funds or the Housing Assistance Grant for which the Applicant is applying;

(d) A proposed budget for the Affordable Housing Project for which the Applicant is applying for Affordable Housing Funds or for a Housing Assistance Grant;

(e) Current independent financial audit;

(f) If the Applicant is a non-profit organization:

(i) Proof of 501(c)(3) tax status;

(ii) Documentation that confirms that no part of its net earnings inures to the benefit of any member, founder, contributor or individual;

(g) If an Applicant is a legal entity, including a non-profit organization:

(i) A current annual budget for the Applicant, including all sources and uses of all funds not just those related to relevant programs and/or a current annual budget only for the program for which the Applicant is applying for a Housing Assistance Grant, or as otherwise may be required by the City and/or the MFA in its discretion;

(ii) An approved mission statement that the Applicant has among its purposes significant activities related to providing housing or housing-related services to Persons or Households of Low or Moderate Income;

(iii) A list of members of the Applicant's current board of directors or other governing body, including designated homeless participation, where required by the City;

(iv) Evidence (or a certification as may be allowed by the City) that the Applicant has a functioning accounting system that is

operated in accordance with generally accepted accounting principles or has a designated entity that will maintain such an accounting system consistent with generally accepted accounting principles;

(v) Evidence that the Applicant has no significant outstanding or unresolved monitoring findings from the City, MFA, or its most recent independent financial audit; or if it has any significant outstanding or unresolved monitoring findings from the City, MFA or its most recent independent financial audit, it has a certified letter from the City, MFA or the auditor stating that the findings are in the process of being resolved;

(vi) An organizational chart, including job titles and qualifications for the Applicant's employees or as otherwise may be required by the City and/or MFA in its discretion. Job descriptions may be submitted as appropriate;

(vii) Documentation that the Applicant is duly organized under State or local law and certification that the Applicant is in good standing with any State authorities, including the Public Regulation Commission and the Secretary of State;

(h) Information as may be required by the City in order for it to determine the financial and management stability of the Applicant;

(i) Information as may be required by the City in order for it to determine the demonstrated commitment of the Applicant to the community;

(j) A completed cost-benefit analysis of the Affordable Housing Project proposed by the Applicant. Any cost-benefit analysis must include documentation that clearly evidences that there is a need for the Housing Assistance Grant being requested from the City, that there is or will be a direct benefit from the project proposed by the Applicant to the community and/or to the purported beneficiaries of the project, consistent with the provisions of the Act, and that the Affordable Housing Project will meet the needs and affordability criteria defined in the City’s Affordable Housing Plan;

(k) Information supporting the benefits to the community of the Affordable Housing Project proposed by the Applicant;

(l) Proof of substantive or matching funds or contributions and/or in-kind donations to the proposed Affordable Housing Project in connection with the Application for funds under the Act. Nothing contained herein shall prevent or preclude an Applicant from

matching or using local, private, or federal funds in connection with a specific Housing Assistance Grant or a grant of Affordable Housing Funds under the Act;

(m) Any certifications or other proof which the City may require in order for the City to confirm that the Applicant is in compliance with all applicable federal, State and local laws, rules and ordinances;

(n) A verification signed by the Applicant before a notary public that the information provided, upon penalty of perjury, is true and correct to the best of the Applicant's information, knowledge and belief;

(o) Certifications as may be required by the City and signed by the chief executive officer, board president, or other authorized official of the Applicant;

(p) Applicant shall submit adequate information, as required by the City and/or MFA, of the Affordable Housing Project proposed by the Applicant. The information provided must clearly evidence the need for the subsidy, that the value of the housing assistance grant reduces the housing costs to Persons of Low or Moderate Income, and that there is or will be a direct benefit from the project proposed by the Applicant to the community and/or to the purported beneficiaries of the project, consistent with the provisions of the Act.

(ii) Additional Requirements for Multi-Family Housing Projects. Applicants who are submitting Applications in connection with a Multi-Family Housing Program must also submit to the City following additional information:

(a) A verified certificate that, among other things:

(i) Identifies every Multi-Family Housing Program, including every assisted or insured project of HUD, RHS, FHA and any other state or local government housing finance agency in which such Applicant has been or is a principal;

(ii) States that, except as shown on such certificate:

(A) No mortgage on a project listed on such certificate has ever been in default, assigned to the Federal Government or foreclosed, nor has any mortgage relief by the mortgagee been given;

(B) There has not been a suspension or termination of payments under any HUD assistance contract in which the Applicant has had a legal or beneficial interest;

(C) Such Applicant has not been suspended, debarred or otherwise restricted by any department or agency of the Federal Government or any state government from doing business with such department or agency because of misconduct or alleged misconduct; and

(D) The Applicant has not defaulted on an obligation covered by a surety or performance bond.

If such Applicant cannot certify to each of the above, such Applicant shall submit a signed statement to explain the facts and circumstances that such Applicant believes will explain the lack of certification. The City may then determine if such Applicant is or is not qualified.

(b) The experience of the Applicant in developing, financing and managing Multiple-Family Housing Projects; and

(c) Whether the Applicant has been found by the United States Equal Employment Opportunity Commission or the New Mexico Human Rights Commission to be noncompliant with any applicable civil rights laws.

(iii) Additional Requirements for Mortgage Lenders. If the Applicant is a Mortgage Lender, the City shall consider, among other things:

(a) The financial condition of the Applicant;

(b) The terms and conditions of any loans to be made;

(c) The aggregate principal balances of any loans to be made to each Applicant compared with the aggregate principal balances of the loans to be made to all other Applicants;

(d) The City's assessment of the ability of the Applicant or designated servicer to act as originator and servicer of Mortgage Loans for any Multi-Family Housing Programs or other programs to be financed; and,

(e) Previous participation by the Applicant in the MFA's programs and HUD, Federal Housing Authority or Rural Housing Service programs.

(iv) Submission Procedure.

(a) Time, Place and Method of Submission Delivery.

(i) If the City issued an RFP, all Applications must be received by the City no later than the deadline set forth in the RFP; otherwise, all applications must be received by the City by the deadline the City has established in connection with the respective award or grant. So that any Qualifying Grantees may be selected prior to January of the year in which any Housing Assistance Grant would be made, the City shall issue any RFP's, solicit any Applications, or otherwise identify any Qualifying Grantees no later than October 15 of any year in order to allow sufficient time for prospective applicants to respond to any such RFP, solicitation, or otherwise, and further to allow MFA not less than forty-five (45) days in which to review any such applications or otherwise determine or confirm that an applicant is a Qualifying Grantee under the Act and consistent with the Rules.

(ii) Applications shall be submitted by Applicants to the City in the form required by the City and shall contain all information which is required by this Ordinance and any RFP which may have been issued.

(b) Additional Factors. The Application procedures shall take into consideration:

(i) Timely completion and submission to the City of an Application or other appropriate response to any solicitation by the City;

(ii) Timely submission of all other information and documentation related to the program required by the City as set forth in this Ordinance or as set forth in the Rules;

(iii) Timely payment of any fees required to be paid to the City at the time of submission of the Application; and

(iv) Compliance with program eligibility requirements as set forth in the Act, the Rules and this Ordinance.

(c) Submission Format.

(i) City or MFA forms (if available) must be used when provided and no substitutions will be accepted; however attachments may be provided as necessary.

(ii) An Applicant's failure to provide or complete any element of

an Application, including all requirements of the City or as may be listed on any RFP, may result in the rejection of the Application prior to review.

(iii) Illegible information, information inconsistent with other information provided in the application, and/or incomplete forms will be treated as missing information and evaluated accordingly.

(iv) The City of Roswell and MFA reserve the right to request further information from any Applicant so long as the request is done fairly and does not provide any Applicant an undue advantage over another Applicant.

(v) The City in its discretion may cancel any RFP or reject any or all proposals in whole or part submitted by any Applicant.

(vi) Neither the City nor MFA shall be responsible for any expenses incurred by an Applicant in preparing and submitting an Application. However, the City or MFA, as applicable, may establish and collect fees from Applicants who file Applications. Notice that fees will be charged and the amount of any such fees shall be included by the City or MFA, as applicable, in any RFP or otherwise shall be advertised as part of the Application solicitation process.

(v) Review by the City. On receipt of an Application, the City shall:

(a) Determine whether the Application submitted by the Applicant is complete and responsive;

(b) Determine whether the Applicant is a Qualifying Grantee as defined herein and in the Act;

(c) Review and analyze whether the Applicant has shown a demonstrated need for activities to promote and provide affordable housing and related services to Persons of Low or Moderate Income and that the proposal is consistent with the City's adopted Affordable Housing Plan;

(d) Determine whether the Applicant has demonstrated experience related to providing housing or services to Persons of Low or Moderate Income; as well as experience and/or the capacity of the Applicant to administer the Affordable Housing Program or Project for which the Applicant has applied;

(e) Determine whether the Applicant’s proposal provides a plan for coordinating with other service providers in the community; whether the Applicant's plan addresses how Persons of Low Income or Moderate Income in need of housing and/or housing related supportive services can receive supportive services and referrals to federal, State and local resources; and, whether the Applicant's plan addresses outreach efforts to reach the population to be served as identified by the City in any RFP, the Affordable Housing Plan or otherwise;

(f) Determine whether the Applicant has support from Public Service Agencies, or other support as may be required by the City and/or MFA in its discretion, for its proposed services in the community;

(g) Ascertain the amount of any matching funds or in-kind services specific to the program that may be utilized by the Applicant in connection with the program;

(h) Ascertain whether any local, private, or federal funds will be used by the Applicant in connection with the specific grant for which the Applicant is applying;

(i) Ascertain whether the Applicant has and can demonstrate the capability to manage the implementation of the Program for which the Applicant is applying;

(j) If Applicant is a prior recipient of either a Housing Assistance Grant, Affordable Housing Funds and/or other Program funds, confirm that the Applicant had no outstanding findings or matters of non-compliance with program requirements from the City or the MFA, as applicable or if it has any such findings, it has a certified letter from the City, MFA, or auditor stating that the findings are in the process of being resolved;

(k) If Applicant is a prior recipient of either a Housing Assistance Grant, Affordable Housing Funds and/or other Program funds, confirm that the Applicant reasonably committed and expended the funds under the prior Program and/or met anticipated production levels as set forth in any contract with the City or MFA, as applicable, for those prior Program funds;

(l) Evaluate the Applicants proposal in part based upon the Applicant's current financial audit;

(m) Evaluate the Applicant's proposed budget for the Project for which the Applicant is applying for Affordable Housing Funds or a Housing

Assistance Grant which proposed budget must be approved by the City before the Applicant can be approved as a Qualifying Grantee and any expenditure of grant funds under the Act or granted property is transferred to the Applicant;

(n) On receipt of an Application from a Builder, the City will analyze the Builder's ability to construct and sell sufficient Residential Housing units to Persons of Low or Moderate Income within the time or times as may be required by the City.

(o) Consider other factors it deems appropriate to ensure a reasonable geographic allocation for all Affordable Housing Programs.

(vi) Certification by the City to MFA. The City shall certify an Application to MFA in writing upon:

(a) Completion of its review of the Application;

(b) Determination that the Application is complete;

(c) Determination that the requirements of the Act, the Rules and this Ordinance have been satisfied; and

(d) Determination that the Applicant is a Qualifying Grantee.

(vii) Review by MFA. MFA upon its receipt of the certification from the City may, in its discretion, review the Application and any of the materials submitted by the Applicant to the City. MFA may also request any additional information from the Applicant, which it may require in order to determine whether the Applicant is a Qualifying Grantee under the Act and the Application is complete. MFA will then notify the City of its determination of whether or not the Application is complete and that the requirements of the Act and the Rules have been satisfied and the Applicant is a Qualifying Grantee. Unless the period is extended for good cause shown, the MFA shall act on an Application within forty-five (45) days of its receipt of any Application, which MFA deems to be complete, and, if not acted upon, the Application shall be deemed to be approved.

(viii) Notification of Acceptance. The City, upon completion of its review of the Application and an evaluation of the criteria for approval of the Application as set forth in the this Ordinance and in any RFP issued by the City and upon its determination that the Applicant is a Qualifying Grantee, and upon its receipt of notification from MFA that it agrees that the Application is complete and that the Act and Rules have been satisfied and the Applicant is a Qualifying Grantee, by written notice, shall notify each Applicant which has submitted an Application of the approval or disapproval of its

Application. Upon approval of its Application, the Applicant shall be considered approved to participate in the Affordable Housing Program. The City's and MFA's determination of any Application shall be conclusive.

D. Additional Requirements. Upon acceptance, the following additional requirements shall apply to any Applicant who is a Qualifying Grantee:

(i) Contractual Requirements. The Qualifying Grantee shall enter into one or more contracts with the City, which contract(s) shall be consistent with the Act and subject to the review by MFA, in its discretion, and which contract(s) shall include remedies and default provisions in the event of the unsatisfactory performance by the Qualifying Grantee.

(ii) Security Provisions; Collateral Requirements. In accordance with the Act, the Rules and this Ordinance, the City shall require the Qualifying Grantee to execute documents, which will provide adequate security against the loss of public funds or property in the event the Qualifying Grantee abandons or fails to complete the Affordable Housing Project, and which shall further provide, as may be permitted by law, for the recovery of any attorneys' fees and costs which the City and/or MFA may incur in enforcing the provisions of this Ordinance, the Rules, the Act and/or any agreement entered into by the City and the Qualifying Grantee, and which documents may include, but are not limited to the following: note, Mortgage, loan agreement, land use restriction agreement, restrictive covenant agreements and/or any other agreement which the City may require in order to allow for any funds which the Qualifying Grantee may receive under a Housing Assistance Grant or Affordable Housing Funds to be adequately secured and to allow the City and MFA to ensure that such funds shall be used by the Qualifying Grantee in accordance with the Act, the Rules and this Ordinance.

(iii) Performance Schedule and Criteria. The Qualifying Grantee shall be required to abide by a reasonable performance schedule and performance criteria that the City, in its discretion, may establish.

(iv) Examination of Books and Records. The Qualifying Grantee shall submit to and the City shall cause to be made such examinations of the books and records of each Qualifying Grantee as the City and/or MFA deems necessary or appropriate to determine the Qualifying Grantee's compliance with the terms of the Act, the Rules, this Ordinance and any contracts between the Qualifying Grantee and the City. The City and/or MFA may require each Qualifying Grantee to pay the costs of any such examination.

(v) Infrastructure Cost Reimbursement Contracts.

(a) Cost Reimbursements. Payment to a Qualifying Grantee under cost reimbursable contract provisions shall be made upon the City's

receipt from the Qualifying Grantee of certified and documented invoices for actual expenditures allowable under the terms of any agreement between the Qualifying Grantee and the City.

(b) Cost Reimbursements For Units of Service. Payment under any unit cost contract provisions shall be made upon the City's receipt from the Qualifying Grantee of a certified and documented invoice showing the number of units of service provided during the billing period.

(c) Rate at which Costs Incurred. Under unit cost or cost reimbursable contracts, it is anticipated that costs will be incurred by the Qualifying Grantee at an approximate level rate during the term of any agreement between the Qualifying Grantee and the City. If The City determines that the Qualifying Grantee is underspending or overspending, then the City may reduce the budget and/or exercise such other budgetary fiscal controls it deems appropriate.

(d) Invoices. Qualifying Grantees shall not submit invoices more than once a month, unless written approval is obtained in advance from the City. Failure to submit invoices within twenty (20) days of the close of the month for which payment is sought may result in the non-availability of funds for reimbursement.

(e) No Dual Application of Costs. The Qualifying Grantee shall certify that any direct or indirect costs claimed by the Qualifying Grantee will not be allocable to or included as a cost of any other program, project) contract, or activity operated by the Qualifying Grantee and which has not been approved by the City in advance, in writing.

(f) Prohibition of Substitution of Funds. Any Affordable Housing Funds or other amounts received by Qualifying Grantee may not be used by Qualifying Grantee to replace other amounts made available or designated by the State or local governments through appropriations for use for the purposes of the Act.

(g) Cost Allocation. The Qualifying Grantee shall clearly identify and distribute all costs incurred pertaining to the Affordable Housing Project by a methodology and cost allocation plan at times and in a manner prescribed by, or acceptable to the City.

(vi) Additional Information. Qualifying Grantees shall provide the City with any and all information which the City may reasonably require in order for it to confirm that the Qualifying Grantees continue to satisfy the requirements of the Act, the Rules and this Ordinance throughout the term of any contract and/or any Affordability Period or otherwise as may be required by the City

or MFA in its discretion. At a minimum, on an annual basis, the City shall certify to MFA in writing that to the best of its knowledge the Qualifying Grantee is in compliance with applicable provisions of the Act, the Rules and this Ordinance.

E. Affordable Housing Requirements. All Affordable Housing Funds or Housing Assistance Grants awarded under the Act are to be used by Qualifying Grantees for the benefit of Persons of Low or Moderate Income subject to the provisions of the Act and with particular regard to their housing related needs.

(i) Single Family Property. Qualifying Grantees shall agree that they shall maintain any single-family property which has been acquired, rehabilitated, weatherized, converted, leased, repaired, constructed, or which property has otherwise benefited from Affordable Housing Funds, including but not limited to any loans which have been repaid with Affordable Housing Funds and which loans previously were secured by such properties, as Affordable Housing for so long as any or all of the Affordable Housing Funds which have been awarded, loaned, or otherwise conveyed to the Qualifying Grantee are unpaid and outstanding or the Affordability Period, whichever is longer.

(ii) Multi-Family Property.

(a) Single Apartment within a Multi-Family Property. Qualifying Grantees shall agree that, if any single apartments are to be rehabilitated, weatherized, converted, leased, repaired, constructed or otherwise are to benefit from Affordable Housing Funds, those apartments shall be leased to Persons of Low or Moderate Income at the time of any such award. Qualifying Grantees, who are the landlords and/or owners of such properties, shall further agree to contribute at least sixty percent (60%) of the cost of the rehabilitation, weatherization, conversion, lease, repair, and/or construction. Qualifying Grantees also shall agree that the Persons of Low or Moderate Income, who are tenants of those apartments, shall be allowed to remain tenants for so long as there are no uncured defaults by those tenants under their respective leases and provided that there is no just cause for the landlord to terminate any lease agreement with those tenants.

(b) Multiple Apartments. Qualifying Grantees shall agree that, if multiple apartments or an entire multi-family property are to be acquired, rehabilitated, weatherized, converted, leased, repaired, constructed or otherwise are to benefit from Affordable Housing Funds, including but not limited to any loans which have been repaid with Affordable Housing Funds and which loans previously were secured by such properties, they shall maintain not less than sixty percent (60%) of

the housing units as Affordable Housing for so long as any or all of the Affordable Housing Funds which have been awarded, loaned, or otherwise conveyed to the Qualifying Grantee are unpaid and outstanding or the Affordability Period, whichever is longer.

(iii) Non-Residential Property. Qualifying Grantees shall agree that they shall maintain any non-residential property which has been acquired, rehabilitated, weatherized, converted, leased, repaired, constructed, or which property has otherwise benefitted from Affordable Housing Funds, including but not limited to any loans which have been repaid with Affordable Housing Funds and which loans previously were secured by such properties, as a facility which provides housing related-services to Persons of Low or Moderate Income for so long as any or all of the Affordable Housing Funds which have been awarded, loaned, or otherwise conveyed to the Qualifying Grantee are unpaid and outstanding or the Affordability Period, whichever is longer.

(iv) Housing Assistance Grant Affordability Requirements. Qualifying Grantees shall agree that they shall maintain any land or buildings received as a Housing Assistance Grant either as either single-family or multi-family Affordable Housing in accordance with Sections 4.E.(i) and (ii) of this Ordinance or as a facility which provides housing related-services to Persons of Low or Moderate Income in accordance with Section 4.E.(iii) of this Ordinance (as applicable) for the duration of the Affordability Period. Qualifying Grantees shall agree that they shall maintain any land or buildings for which they have received the costs of Infrastructure as a Housing Assistance Grant either as either single-family or multi-family Affordable Housing or as a facility which provides housing related-services to Persons of Low or Moderate Income (as applicable) for the duration of the Affordability Period. In calculating the Affordability Period for Housing Assistance Grants of either land or buildings, the fair market value of the land or buildings or the costs of Infrastructure at the time of the donation by the City shall apply.

(v) Affordability Period. The City, in its discretion, may increase the Affordability Period in any contract, note, Mortgage, loan agreement, land use restriction agreement, restrictive covenant agreements and/or any other agreement which the City may enter into with any Qualifying Grantee or beneficiary of the Affordable Housing Funds or of the Housing Assistance Grant. (See definition of Affordability Period in Section 3.H. of this Ordinance.) Notwithstanding the foregoing, in the discretion of MFA, weatherization funds conveyed from the State to MFA and/or any other similar conveyances where an Affordability Period is not practical, shall not be subject to the Affordability Period requirements of this Section 4.E.; but nevertheless, any such conveyances may be subject to recapture on some pro-rated basis as determined by the City and/or MFA.

F. **Consent to Jurisdiction.** Each Qualifying Grantee shall consent to the jurisdiction of the courts of the State over any proceeding to enforce compliance with the terms of the Act, the Rules and this ordinance and any agreement between the Qualifying Grantee and the City and/or MFA.

G. **Recertification Procedures.**

(i) The Qualifying Grantee must meet the requirements of the Act, the Rules and this Ordinance both at the time of any award and throughout the term of any grant and contract related thereto.

(ii) The City may establish procedures for recertifying Qualifying Grantees from time to time.

(ii) Qualifying Grantees that fail to satisfy the requirements for Recertification shall cease to be eligible and shall be denied further participation in Affordable Housing programs until the requirements of the City and MFA are satisfied.

H. **Compliance with the Law.** Qualifying Grantee shall provide the City with any certifications or other proof that it may require in order for the City and MFA to confirm that the Qualifying Grantee and the Qualifying Grantee's proposed Project are in compliance with all applicable federal, State and local laws, rules and ordinances. At a minimum, on an annual basis, the Qualifying Grantee shall provide the City with certifications and proof of compliance, and the City shall certify to MFA in writing that the Qualifying Grantee is still in compliance with the Act and the Rules.

I. **City of Roswell Grant Requirements.**

(i) The City is authorized to make Housing Assistance Grants under the Act. Upon determination that the City will make a Housing Assistance Grant, including the use of any Affordable Housing Funds, the City shall, upon request, provide MFA with the following:

(a) Documentation that confirms that the City has an existing valid Affordable Housing Plan;

(b) Documentation that confirms that the City has an existing valid Affordable Housing Ordinance which provides for the authorization of the Housing Assistance Grant, including the use of any Affordable Housing Funds;

(c) Written certification that the proposed grantee is in compliance with Act and the Rules so that MFA may confirm that the Application is

complete, and that the proposed grantee is a Qualifying Grantee under the Act and the Rules.

(ii) Prior to the submission of the application and project authorization to the Council, the Council must approve the budget submitted by the Applicant.

(iii) An action authorizing the City to make a Housing Assistance Grant and/or distribute Affordable Housing Funds:

(a) Must authorize the grant, including use of Affordable Housing Funds, if any;

(b) Must state the requirements and purpose of the grant; and

(c) Must authorize the transfer or disbursement to the Qualifying Grantee only after a budget is submitted to and approved by the Council;

(d) Must comply with the Rules, as amended;

(e) May provide for matching or using local, private or federal funds either through direct participation with a federal agency pursuant to federal law or through indirect participation through MFA.

(iv) MFA shall act to approve the proposed Housing Assistance Grant authorized by the City within forty-five (45) days of its receipt of the documentation required above in Section 4.I.(i), (ii) and (iii) of this Ordinance.

(v) The City, in its discretion, may also hold any award of Affordable Housing Funds or any Housing Assistance Grant made by the City in suspension pending the issuance by the City of any RFP or pending the award of the Affordable Housing Funds or of the Housing Assistance Grant by the City to the Qualifying Grantee without the issuance of an RFP by the City. Any award of Affordable Housing Funds or a Housing Assistance Grant by the City shall subject the Qualifying Grantee of the award or grant to the oversight of the City and MFA under this Ordinance and the Rules.

J. School District and Public Post-Secondary Educational Institution Donations for Housing Projects. If a school district or a public post-secondary education institution intends to transfer land to the City to be further granted to a Qualifying Grantee as part or all of an Affordable Housing project, this transfer shall be subject to the limitations contained in the Act that the school district and the Commission enter into a contract that provides the school district with a negotiated number of affordable housing units that will be reserved for employees of the school district. Any transfer of land by a public post-secondary educational

institution shall be subject to the additional limitations contained in the Act that:

(i) The property transferred shall be granted to a Qualifying Grantee by the City as part of a grant for an Affordable Housing project; and

(ii) The governing board of the public post-secondary educational institution and the Council enter into a contract that provides the public post-secondary educational institution with Affordable Housing units.

As used in this section, "public post-secondary educational institution" means a state university or a public community college. The City, in its discretion, may also hold any Housing Assistance Grant made by any school district or public post-secondary educational institution in suspense pending the issuance by the City of any RFP or pending the award of the Housing Assistance Grant by the City to the Qualifying Grantee without the issuance of an RFP by the City. Any award of a Housing Assistance Grant by a school district or a public post-secondary educational institution shall subject the Qualifying Grantee of the grant to the oversight of the City and MFA under the Rules.

Section 5. DISCRIMINATION PROHIBITED.

The development, construction, occupancy and operation of an Affordable Housing Program or an Affordable Housing Project financed or assisted under the Act shall be undertaken in a manner consistent with principles of non-discrimination and equal opportunity, and the City shall require compliance by all Qualifying Grantees with all applicable federal and State laws and regulations relating to affirmative action, non-discrimination and equal opportunity.

Section 6. ADMINISTRATION.

The City shall administer any Affordable Housing programs in accordance with provisions of the Act, the Rules, this Ordinance, any applicable state and federal laws and regulations as each of which may be amended or supplemented from time to time. The City, in establishing, funding and administering the Affordable Housing Programs and by making, executing, delivering and performing any award, contract, grant or any other activity or transaction contemplated by the Act, shall not violate any provision of law, rule or regulation or any decree, writ, order, injunction, judgment, determination or award and will not contravene the provisions of or otherwise cause a default under any of its agreements, indentures, or other instruments to which it may be bound. Any proposed amendment to this ordinance shall be submitted to MFA for review prior to adoption by the Council.

Section 7. TERMINATION.

The City Council may repeal this Ordinance and terminate the City's Affordable Housing Program and any or all contracts undertaken in its authority. Termination shall be by ordinance at a public hearing or in accordance with the terms of the contract. If an

ordinance or a contract is repealed or terminated, all contract provisions of the contract regarding termination shall be satisfied.

Section 8. REPEALER.

All bylaws, orders, resolutions and ordinances, or parts thereof, inconsistent with this Ordinance are repealed by this Ordinance but only to the extent of that inconsistency. This repeal shall not be construed to revive any bylaw, order, resolution or ordinance, or part thereof, previously repealed.

Section 9. SEVERABILITY.

If any section, paragraph, clause or provision of this Ordinance shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of that section, paragraph, clause or provision shall not affect any of the remaining provisions of this Ordinance.

Section 10. EFFECTIVE DATE.

This ordinance shall be effective after five (5) days following its publication as required by State law.

PASSED, ADOPTED, SIGNED and APPROVED the 13th day of October, 2016.

CITY SEAL

_____
Dennis Kintigh, Mayor

ATTEST:

_____
Sharon Coll, City Clerk

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 16.**
Meeting Date: 09/08/2016
COMMITTEE: Infrastructure
CONTACT: Louis Najar **CHAIR:** Jeanine Corn-Best

ACTION REQUESTED:

Smart Meter Water Project - Consider approval of the Investment Grade Audit for the Smart Water Meter Project as presented and instruct staff to proceed to the next phase of the project development. (Best/Najar)

BACKGROUND:

Staff has observed a substantial amount of water use not being captured within the City water revenue due to antiquated metering systems.

This project would replace current antiquated systems with new technologies which utilize highly accurate devices so the City may capture true water use along with accurate revenue.

The next phase of the project will consist of final product selection and establishing a final budget. This phase will then also be presented to Infrastructure and Finance Committees then on to Council for final approval.

FINANCIAL CONSIDERATION

Not applicable.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

The Infrastructure Committee recommended approval (3-0) at their meetings on August 15, 2016 and the Finance Committee recommended approval (4-0) at their meeting on September 1, 2016.

STAFF RECOMMENDATION:

Consider approval of the Investment Grade Audit for the Smart Water Meter Project as presented and instruct staff to proceed to the next phase of the project development.

Attachments

Smart Meter Project

Water Meter and Leak Detection Project

Draft Review

August 8, 2016

Prepared by:

YEAROUT ENERGY SERVICES

Yearout Energy Service Company

CITY OF ROSWELL

PO BOX 1838 + ROSWELL, NM 88202-1838 + TEL: 575-624-6700 + FAX: 575-624-6709 + www.roswell-nm.gov

August 8, 2015

RE: Smart Water Meter Project; Investment Grade Audit

Councilors,

I am writing this quick summary to provide you with a short explanation of this project and where we are today. As you know we have been diligently working on the Smart Water Meter Project since October of 2015. The initial phase of the project was this Investment Grade Audit. This report will tell the State of New Mexico if the water loss recapture will pay for the project within a given time frame. Once this is proven then the project is approved to move forward to start installing the new water meters and associated technology.

We have great news and the findings show that we have a 20 year project with a given ROI (*Return-On-Investment*) of 53%. This means the City of Roswell's total investment will be $25,961,282 and our total revenue and savings will be $39,807,083. The City of Roswell will stand to profit $13,845,801.

This project will take close to 1 Year to complete as we will be replacing 19,385 total water meters. This will include all commercial meters along with all residential water meters. Along with this technology we will have remote read water meters which will be read remotely from the water billing office. Along with the remote read capabilities we will also be able to remotely turn off and turn on water meters from the office for all of the ¾" water meters. Our ¾" water meters account for about 15,400 of our 19,385 total water meters.

We will have Yearout present the project and its findings at the August 15th Infrastructure meeting then again at the September 1st Finance meeting. We will also have RBC Capital Markets at both meetings to also present the finance options of the project.

This project will not have a negative impact on our bond rating and it will not have a negative impact on our General Obligation bonding capacity. RBC will explain this in detail during the meeting but basically the utility and it's bonding capacity will be taking care of this project and the GO Bonds will be handled from the general funding pool.

Several departments have contributed to this project; Finance, Water, Water Billing and Engineering. This was a very time consuming process and we thank everyone for their assistance and we hope you will find this a very advantageous investment for the City of Roswell.

Regards,

Kevin Dillon

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Introduction

The City of Roswell and Yearout Energy Services Company (YESCO) have been working to investigate a water meter replacement program. The City of Roswell (City) has an aging water meter inventory and has been seeking to upgrade water meters. The majority of the water meter inventory is currently over 20 years old and has reached the end of useful life. The current mechanical water meters slow down over time which results in the water meters not registering the consumption accurately, substantially reducing revenues to the City. Roswell has also experienced a large volume of shut-offs and restarts, which was investigated by both Roswell and YESCO. The lack of accurate reading meters and cost for meter shut-offs is causing a short-fall in collected revenue. YESCO has prepared the following Investment Grade Audit to help bring funding to the City of Roswell for this project.

The City of Roswell receives a substantial amount of revenue with its sewer system as well. The higher accuracy of a new automated reading system will allow the City to increase revenue on the sewer billing since a new system will allow for accurate usage. Through a complete meter replacement with Advance Metering Infrastructure (AMI) system, the City will able to save money on operations and maintenance costs, as well as engage current meter reading personnel in more conservation and leak detection efforts.

New water meter technology has been available for several years but the cost of system wide replacement was prohibitive. YESCO recommended utilizing Energy Savings Performance Contracting under NMSA 1978 6-23. This has allowed the City to contract with YESCO to perform an Investment Grade Audit (IGA) on the water system, determine a savings in non-revenue water loss, and apply those savings to fund a system wide replacement of the water meters. This system wide replacement of meters will be fully funded by the savings proposed in the audit, and will not impact the City's budget or be paid for by a rate hike.

The City wanted to be able to read the meters automatically, so YESCO and the City worked together to find a vendor that had the most efficient meter, customer friendly billing software, remote disconnect abilities, and data collection information that met the City's requirements. YESCO and the City vetted a number of different vendors and technologies. The technology was selected for "AMI" reading with a solid-state flow meter technology. The type of technology is read wirelessly with a proprietary bandwidth through a series of collectors and repeaters. This gives the City the ability to read the entire meter inventory in real-time and from the comfort and safety of the billing office. The meters will collect data continuously, report tampering, leakage, and will have the ability to be shut off remotely to protect the system from costly, labor intensive mechanical shut-offs. The City water employees can now be assigned to leak detection and system maintenance if so determined by the City. The new AMI meters send the information at a request signal which lasts less than a second. The technology promotes long

battery usage and will give the City's water authority very clear data on when water is used. This data will allow the water authority to become more efficient by trending usage data and delivery costs, and have more accurate and timely customer service.

This Energy Performance Contract will benefit the City by providing a fully upgraded system that will not impact the budget and will be funded by the savings. YESCO proposes the savings and payback amounts as outlined in the document. Baseline measurements were determined by auditing a statistical population of water meters that give a measureable re-capture of non-revenue water. Conservation is one of the greatest benefits in an area where water resources are scarce. This system will enable the City to track usage very accurately and to bill for actual water usage within the delivery area.

The draft includes accurate, audited savings in accordance with AWWA. Project costs are currently shown for budgetary comparison, as YESCO and City are developing final financial package.

Executive Summary

YESCO performed an Investment Grade Audit (IGA) that included analyzing the consumption and production data from the City in order to collaboratively establish with the City an agreed upon (Stipulated) water and sewer consumption baseline. YESCO also performed meter accuracy tests in the field based on a statistical sample size of existing meters. This was done in order to calculate the existing meter accuracy used for the total population per meter size. The City then selected a meter manufacturer to provide new meter replacement along with an Advanced Metering Infrastructure (AMI) system and billing software. YESCO will guarantee the new meter accuracy in accordance with the manufacturer's warranty. The increase in new meter accuracy will provide a more accurate billable consumption. The City provided current and past rates for water and sewer. Using the consumption baseline, increase in meter accuracy, and City rates, YESCO, through discussions and approval with the city, has calculated the stipulated increase in revenue the City will gain from installing more accurate meters. YESCO does not guarantee the projected revenue increase for water and sewer. YESCO has calculated stipulated savings from reduced Operational and Maintenance (O&M) cost from the implementation of an AMI system (based on information from the City), and reduction in future meter purchase. This information was then used to perform an economic analysis of the project.

The table below summarizes the water and sewer revenue increase to be $816,388 for water and $345,134 sewer, totaling $1,161,472. Adding the $536,530 O&M savings, the total projected savings and increase revenue is $1,698,002 in year one.

Summary	Savings $/Yr.
Water and Sewer Revenue	$1,161,472
O&M Savings*	$536,530
Total	$1,698,002

*year one

The determination of appropriate proposed project for actual implementation is a result of the economic analysis. This can be determined by the simple payback, which is investment cost divided by the first year revenue increase and O&M savings. The total project cost is currently budgeted at $19,467,887 (not including NMGRT). The revenue increase and savings are $1,698,002, which calculates to a simple payback of 11.5 years.

Project Cost	$19,467,887
Total Savings	$1,698,002
Simple Payback	**11.5 Years**

The total revenue and saving is $39,807,083, with escalation, over 20 years. The project cost (investment) is $25,961,282. The Return on Investment (ROI) calculated to 53% as shown in the table below.

Total Revenue & Savings	$39,807,083
Investment	$25,961,282
ROI	**53%**

The table above includes the annual AMI system maintenance fee ($51,000 per year, escalating after year 1) and M&V ($50,000 per year, escalating after year 1) the City will be responsible for. These cannot be included in the project cost because they are considered annual fees, and cannot be financed up front. These cost are included in the economic analysis.

By implementing this project the City will benefit from the following:

- Increase meter accuracy resulting in higher revenue for the City.
- Installation of an AMI system will give the City the ability to provide real-time data for the entire meter inventory. This includes continuous data collection, report of tampering, and leakage reporting, all from the comfort and safety of the billing office.
- The system will have the ability to be shut off remotely for all ¾" meters.
- The City water employees can now be assigned to leak detection and system maintenance, if so determined by the City.
- The new AMI meters will give the City's Water Department very clear data on when water is used. This data will allow the Water Department to become more efficient by trending usage data and delivery costs, and have more accurate and timely customer service.
- Replacing the water meters will reduce failures and result in fewer service calls.

YESCO will provide Measurement and Verification (M&V) services (through an annual M&V contract) and a post retrofit sample of meters will be selected and measured. The measurements and calculations will use the same methodology explained in the meter audit. The post M&V will be solely used to verify the meter accuracies. A report of these findings will be provided to the City.

1.0 Project Description

YESCO performed an Investment Grade Audit (IGA) and has developed a project that will provide the City with new meters and implement a leak detection program. The system will include automatized recording and tie into the existing billing system. This includes an indicating system that flags accounts with non-typical consumption, typically caused by leaks. This system will reduce reading time and allow City employees to dedicate time to a leak detection program, reducing real losses. This project will both increase the City's revenue and conserve water.

1.1 Water Balance

As shown in the table below, there are two categories of water losses in the AWWA water balance that fall under non-revenue water: 1) **Apparent losses** and 2) **Real losses**. **Apparent losses** fall into a number of categories: theft, meter inaccuracies, error in meter reading, and data handling. **Real losses** are categorized by leakage in transmission and distribution mains, storage leaks and overflows, and service leaks up to meters. The savings from this project will be both in apparent losses and real losses. Apparent losses will be reduced by installing new, more accurate meters. Replacing less accurate meters will provide a more accurate billable consumption, increasing revenue by allowing City employees to proactively mitigate real loses, rather than reading meters.

Table 1.1: AWWA Water Balance

<table>
<tr><td rowspan="12">Water From Own Sources (corrected for known errors)</td><td rowspan="13">System Input Volume</td><td>Water Exported</td><td rowspan="5">Authorized Consumption</td><td rowspan="3">Billed Authorized Consumption</td><td>Billed Water Exported</td><td rowspan="3">Revenue Water</td></tr>
<tr><td rowspan="12">Water Supplied</td><td>Billed Metered Consumption</td></tr>
<tr><td>Billed Unmetered Consumption</td></tr>
<tr><td rowspan="2">Unbilled Authorized Consumption</td><td>Unbilled Meter Consumption</td><td rowspan="11">Non-Revenue Water</td></tr>
<tr><td>Unbilled Unmetered Consumption</td></tr>
<tr><td rowspan="7">Water Losses</td><td rowspan="3">Apparent Losses</td><td>Unauthorized Consumption</td></tr>
<tr><td>Customer Meter Inaccuracies</td></tr>
<tr><td>Systematic Data Handling Errors</td></tr>
<tr><td rowspan="4">Real Losses</td><td>Leakage on Transition and Distribution Mains</td></tr>
<tr><td>Leakage on Overflows at Utility's Storage Tanks</td></tr>
<tr><td>Leakage on Service Connection Up to Point of Customer Metering</td></tr>
<tr><td>Water Imported</td></tr>
</table>

A water balance was calculated and tabulated below, and additional data is available in **Appendix-A and B**. The water produced included water stored in reservoirs. The 'Water System Wells Total Water Production' data was provided from the 'Monthly Water Production Report' and the 'Water System Total Water Produced' was in this report. This data was provided by the City. This does not include production from the Parks Wells that supply the parks from 'behind' the meter, since this water does not enter the water system. The metered consumption did include the Parks, Golf Course, and Cemetery meters since this is additional water provided by the water system (see **Appendix-A** for data and notes). The analysis did not include Unbilled Authorized Consumption (e.g. fire hydrants, flushing water mains, testing). In 2015, the City produced 3,742,751 kGal of water and the billed metered consumption was 2,649,237 kGal for a loss of 29% as shown in the table below.

Table 2.1: Water Balance

Year	2014	2015
Water System Wells Total Water Produced (kGal)	4,095,674	3,742,751
City Metered CNS (kGal)	2,913,231	2,649,237
Loss	1,182,443	1,093,514
% Loss	**29%**	**29%**

*CNS-Consumed

As shown in the above table, both the produced and metered water consumption has reduced over the last two years, while the percent water loss has remained the same.

1.2 Investment Audit Overview

YESCO analyzed consumption and production data from the City in order to establish collaboratively with the City, an agreed upon water and sewer consumption baseline. YESCO also performed meter accuracy test in the field based on a statistical sample size of existing meters. This was done in order to calculate the existing meter accuracy used for the total population per meter size. The City then selected a meter manufacturer to provide new meter replacement along with an Advanced Metering Infrastructure (AMI) system. YESCO will guarantee the new meter accuracy in accordance with the manufacturer's warranty. The increase in new meter accuracy will provide a more accurate billable consumption. The City provided current and past rates for water and sewer. Using the consumption baseline, increase in meter accuracy and City rates, YESCO, through discussions and approval with the city, has calculated the anticipated increase in revenue the City will gain from installing more accurate meters. YESCO has calculated stipulated savings from reduced Operational and Maintenance (O&M) cost from the implementation of an AMI system, and reduction in future meter purchase. This information was then used to perform an economic analysis.

1.3 Engineering Development

YESCO preformed an analysis of the existing water meter system. This included analyzing data provided by the City in order to calculate baseline consumptions for water and sewer from the years 2014 and 2015. A meter accuracy test was performed on a statistical sample size of meters in order to calculate the existing meter accuracy per meter size for the whole population. This data, along with City water and sewer rates, was used to calculate an anticipated increase in revenue due to the replacement of existing meters with new, more accurate meters. The cost of replacement was then divided by the increased revenue and O&M savings in order to calculate a project payback timeline.

1.4 Baseline Analysis

The City provided data in the form of a excel spreadsheet from SunGard, the utility software, for 2014 and 2015. This included monthly water and sewer consumption, along with revenue charges per account. This data was then used to create the baseline. The 'raw' data was analyzed in Excel using pivot tables.

1.5 Financial Development

The City of Roswell chose the best meter and AMI vendor that met the City's requirements. YESCO then preformed a financial analysis of the project cash flow. This, along with a detailed scope of work, is provided in the following pages.

2.0 Water / Sewer Utility

Water source for the City is ground water. Water production incorporates 11 employees. Their responsibility is operation and maintenance (O&M) of five reservoirs, four pressure regulating stations, and 20 water wells.

The Water Maintenance and Transmission Department employees a staff of 25 that maintain approximately 350 miles of water mains, 4,000 fire hydrants, and the valves and fittings that supply water to the 49,000 City residents.

All sanitary sewage within the City limits is collected in a network of pipes and transmitted to a sewage treatment plant operated by the City. The sewer collection system consists of 250 miles of sewer lines and four lift stations.

The Utilities Billing Department consists of 13 employees. Their task is to gather the necessary information and to prepare customer monthly water and sewer bills. This is accomplished by physically reading water meters, analyzing the data, and submitting the results for billing purposes. The department also acts as the payment collection point for the City's water bills and to assist customers on issues concerning the City's water system. Five meter readers, in five vehicles, use hand held devices to record meter readings.

The City of Roswell meter data collection includes 19 routes/billing cycles and a total of 17,670 meters. The routes and meter recordings are currently collected manually by City employees. The quantities are recorded and calculated using previous monthly recording. This information is then transferred to billings, which includes accounting operations and archiving. This method results in inefficiencies and inaccuracies that can lead to errors in billing.

3.0 Baseline Utility Data

3.1 Water Utility

The City of Roswell provided water utility data from 2014 and 2015 (See **Appendix-B**). From this data the average monthly account for 2015 is 17,670 active meters, as shown in the table below.

Table 3.1: 2015 Average Monthly Meter Quantity by Size

Meter Size	Installed	In Service	%
¾"	15,424	14,016	79.3%
1"	2,235	2,076	11.7%
11/2"	1,077	997	5.6%
2"	487	447	2.5%
3"	112	93	0.5%
4"	37	32	0.2%
6"	12	8	0.0%
8"	1	1	0.0%
Total	**19,385**	**17,670**	**100.0%**

The ¾" meters are 79.3% percent of the total population, 1" are 11.7%, and 1 ½" are 5.6%. These three meter sizes represent 96.7% percent of the meter population with the remainder commercial meters. There is one 8" meter associated with a City owned account that is not active.

3.1.1 Water Rate

Water rates vary, per the first 3 kGal's, depending on meter size, and location (city or county service). Non-City customers are to pay double rates per City ordinance. The table below shows the rates for 2016. The monthly base charge includes the first 3,000 Gallons (3 kGal). For consumption above 3 kGal costumers in the City pay $1.96 per kGal and county costumers pay $3.92 per kGal. See **Appendix-D** for rates.

Table 3.2: 2016 Water Rate

2016	City Service		Country Service	
Meter Size	First 3 kGal	After Per kGal	First 3 kGal	After Per kGal
¾"	$16.00	$1.96	$32.00	$3.92
1"	$17.82		$35.64	
1½ "	$27.22		$54.44	
2"	$35.47		$70.94	
3"	$44.95		$89.90	
4"	$67.44		$134.88	
6"	$89.82		$179.64	

In 2015, on average there were 160 County accounts and 17,510 City accounts.

3.1.2 Water Rate Escalation

Water rates increased in 2014 by +7.69%, in 2015 by +7.13%, and in 2016 by +6.67%. Rates increased twice during 2013. The first was +3.00% increase, from the previous year in January, and again, by 22.08% increase, in March.

Table 3.3: Water Rate Escalation

Year	Rate Increase
2012	3.00%
2013	25.08%
2014	7.69%
2015	7.13%
2016	6.67%
Avg.	**9.91%**

From 2012 through 2016 the average annual rate increase was +9.91%.

3.1.3 Metered Water Consumption

The table below shows total metered water by end user according to meter size for the years 2014-2015 data (See **Appendix-B**). The average of these two years was used to establish the **Metered Water Consumption Baseline Average.** This represents the baseline water consumption that is affected by meter inaccuracies. The baseline consumption amount is 2,781,234 kGal.

Table 3.4: Baseline Metered Water Consumption (kGal)

Meter Size	2014	2015	Baseline Avg.	% of Total
¾"	1,534,451	1,393,536	**1,463,993**	52.6%
1"	410,710	375,834	**393,272**	14.1%
1½ "	271,153	270,089	**270,621**	9.7%
2"	345,553	308,377	**326,965**	11.8%
3"	125,269	117,133	**121,201**	4.4%
4"	174,415	139,961	**157,188**	5.7%
6"	51,681	44,308	**47,995**	1.7%
8"	-	-	**-**	0.0%
Total	**2,913,231**	**2,649,237**	**2,781,234**	**100.0%**

The largest water consumption by meter size is the ¾", consuming 52.6%, while 1" is 14.1%, and 2" is 11.8%.This totaled 78.5% of the metered water. Water consumption reduced from 2014 through 2015 by -9%.

During 2015, City accounts consumed 2,609,646 kGal and the County accounts 39,591 kGal. There are 158 accounts associated with irrigation water that consumed 162,070 kGal in 2015. The City water rate base charge includes the first 3 kGal and was reduced from the baseline in our analysis to establish the Baseline **Consumption (CNS) Above the Base Charge** and this represents metered water billed to customers. This was calculated monthly for each account and then summarized in the following table.

Table 3.5: Baseline Metered Water Consumption above 3 kGal (kGal)

Meter Size	2014	2015	Baseline Avg.	% of Total
¾"	1,094,236	962,795	**1,028,515**	46.1%
1"	334,356	310,805	**327,580**	14.7%
1½ "	239,353	238,948	**239,150**	10.7%
2"	331,577	294,671	**313,124**	14.0%
3"	122,373	114,425	**118,399**	5.3%
4"	173,376	138,955	**156,161**	7.0%
6"	51,426	44,059	**47,743**	2.1%
8"	-	-	**-**	0.0%
Total	**2,356,688**	**2,104,659**	**2,230,673**	**100.0%**

The baseline consumption above 3 kGal is 2,230,673 kGal.

3.1.4 Water Revenue

The 2014 and 2015 billing is summarized in the table below per meter size and the average of the two years was used to calculate the baseline. Additional data is available in **Appendix-B**.

Table 3.6: Billed Water

Meter Size	2014	2015	Baseline Avg.	% of Total
¾"	$4,253,626	$4,282,282	**$4,267,954**	57.3%
1"	$1,003,221	$1,008,189	**$1,005,705**	13.5%
1½ "	$715,491	$760,030	**$737,761**	9.9%
2"	$776,385	$757,951	**$767,168**	10.3%
3"	$259,231	$261,092	**$260,162**	3.5%
4"	$330,054	$288,634	**$309,344**	4.2%
6"	$95,998	$88,900	**$92,449**	1.2%
8"	$1,886	$2,021	**$1,954**	0.0%
Total	**$7,435,892**	**$7,449,099**	**$7,442,496**	**100.0%**

The largest billed amount by meter size is the ¾" meters representing 57.3%, while 1" is 13.5%, and 1 1/2" and 2" are 9.9% and 10.3%. Meter sizes ¾" through 2" represent 91.0% of billed revenue.

During 2015 City accounts billed $7,276,117 and the County accounts $172,982.

3.2 Sewer Utility

Sewer is billed based on metered water consumption on a monthly bases. The metered water consumption amount billed toward sewer is different than the water. Therefore a separate baseline was established. Similar to water, the County rate is double that of the City accounts.

3.2.1 Sewer Rate

The published Sewer rate also varies depending on location (City or County service) and consumption. The table below shows the rates for 2016. For city customers there is a monthly base charge of $9.66 and an additional charge of $1.44 for each kGal of water consumption. For county costumers, the monthly base charge is $19.32 and additional charge of $2.88 per kGal.

Table 3.8: 2016 Sewer Rate

City Service		Country Service	
Base Rate	Per kGal	Base Rate	Per kGal
$9.66	$1.44	$19.32	$2.88

Sewer rates are established by calculating water consumption using the average of the three less consumption months (December, January, and February). This is then used as the monthly billed consumption for the following year. These are typically low consumption months. The draw back for the City is loss in revenue due to the averaging of the three typically low -month consumptions. This is further explained in section *3.3-Utility Data Analysis*.

3.2.2 Sewer Rate Escalation

The sewer rate escalation will be similar to that of the water rate. Rates increased twice during 2013. Each increase was +7.69%, the first from the previous year in January and then again in March. From 2012 through 2016 the average annual rate increase was +7.97% as shown in the following chart. This is slightly lower than water.

Table 3.9: Sewer Rate Escalation

Year	Rate Increase
2012	3.00%
2013	15.38%
2014	7.69%
2015	7.13%
2016	6.67%
Avg.	**7.97%**

3.2.3 Metered Sewer Consumption

The consumption for sewer values are tabulated below and additional information is available in **Appendices-C.** Similar to the water, the average of the two years (2014-2015) was used to establish the **Baseline Average.** This represents the baseline consumption that is affected by meter inaccuracies and billed for sewer.

Table 3.10: Baseline Metered Sewer (kGal)

Meter Size	2015 Avg. Meter Qty	2014	2015	Baseline Avg.	% of Total
¾"	14,016	928,966	810,094	**869,530**	56.2%
1"	2,076	197,800	168,809	**183,304**	11.8%
1½ "	997	131,286	141,795	**136,540**	8.8%
2"	447	188,334	177,506	**182,920**	11.8%
3"	93	81,743	80,751	**81,247**	5.2%
4"	32	71,757	62,768	**67,262**	4.3%
6"	8	28,252	25,961	**27,106**	1.8%
8"	1	-	-		
Total	**17,670**	**1,628,137**	**1,467,683**	**1,547,910**	**100.0%**

The largest water metered by size is the ¾" which consumed 56.2%, while 1" and 2" were 11.8%, and 1 1/2" was 8.8%. Metered consumption from 2014 and 15 dropped -10%.

During 2015 City accounts were charged for a consumption of 1,467,143 kGal and the County accounts 540 kGal.

3.2.4 Sewer Revenue

The City sewer revenue is tabulated and additional data is available in **Appendix-C**. The average of the two years is $3,804,711.

Table 3.11: Billed Sewer

Meter Size	2014	2015	Average	%
¾"	$2,572,489	$2,578,434	**$2,575,461**	67.7%
1"	$440,256	$430,879	**$435,568**	11.4%
1½ "	$260,406	$292,127	**$276,266**	7.3%
2"	$275,337	$279,859	**$277,598**	7.3%
3"	$110,942	$117,129	**$114,035**	3.0%
4"	$92,546	$86,921	**$89,733**	2.4%
6"	$36,308	$35,790	**$36,049**	0.9%
8"	$0	$0		
Total	**$3,788,284**	**$3,821,138**	**$3,804,711**	**100.0%**

The ¾", 1", and 1 ½" meter accounts represent 86.4% of the revenue, while 2" represent 7.3%. Meter accounts 3" through 6" only account for 6.3% of sewer revenue.

During 2015 City accounts billed $3,820,363 and the County accounts $775.

3.3 Utility Data Analysis

According to the rate, the water metered should equal the sewer metered consumption and the baselines should be equal or very close. As shown in the table below 2015, water consumption was 2,649,237 kGal and after subtracting the irrigation accounts the water consumption is 2,482,167 kGal. This should be the sewer consumption billed. The actual sewer consumption is 1,467,683 kGal. This is a significant difference of 1,014,484 kGal. After review with the City accounting, YESCO discovered that a different method of calculating the billed sewer consumption was used. The average of three months was calculated using November, December, and January. This average was then used for each month during the following year. This method is common among municipalities. The draw back for the City is loss in revenue due to the averaging of the three typically low month consumptions. If the City used the published rate and billed sewer consumption was equal to water consumption the City would increase its revenue by approximately $1.46 million a year.

Table 3.12: Additional Sewer Revenue

	2015
Water CNS	2,649,237
Irrigation	167,070
Delta	2,482,167
Sewer	1,467,683
Delta	1,014,484
Sewer Rate	$1.44
Total	**$1,460,857**

This is the total potential revenue gain, if the City billed sewer on water consumption. The "Delta" shown above is the irrigation water that does not impact the City sewer system.

4.0 Meter Project

If a significant percentage of meters do not accurately measure consumption, then the City of Roswell is losing billable consumption revenue. By replacing inaccurate meters with more accurate meters, and by using the established baseline water consumption, it is expected that the volume of water registered will increase and therefore increase billable consumption and revenue.

The testing of existing meters followed guidelines and best practices according to Water Meters-Selection, Installation, and Testing- Manual of Water Supply Practices-M6 published by the American Water Works Association (AWWA). A statistical representation of meters by size were selected for evaluation. Meters were divided into categories according to size. Meter testing was conducted at minimum, intermediate, cross, and high flow rates. A weighting factor was assigned to each rate according to meter category.

The results of the accuracy test were categorized by meter size, along with calculating the Weighted Average Accuracy (WAA). This, along with consumption, was used to calculate the unbilled water quantity. The recovered revenue was estimated from comparing the existing tested meters inaccuracy with a new, more accurate system.

An economic analysis was performed and the cost of replacing the system was divided by the anticipated annual revenue increase along with the Operation and Maintenance (O&M) savings in order to calculate the payback.

5.0 Pre-Retrofit Measurement and Verification (Meter Accuracy Audit)

5.1 Methodology

The variables affecting the savings from the meter project include meter accuracy, consumption, and billing rate. The Measurement and Verification (M&V) shall follow the International Performance Measurement and Verification Protocol (IPMVP). The determination of water and monetary savings will follow current best practices, as defined in IPMVP Volume I, EVO 1000-1:2012, **Option-A Retrofit Isolation: Key Parameter Measurement**. This method includes measuring the key performance parameter (meter accuracy) of a selected population and estimating other parameters (water consumption and rates). The measurement boundary will be the meter. The testing for this water audit was performed by RTS Water Solutions.

5.2 Meter Audit

5.2.1 Objective

The objective of this test was to calculate the meter accuracy, which is the comparison of the meter's indicated quantity of water with the actual quantity of water passing through. This is called Percent Registration (% registration). The testing was performed by RTS Water Solutions following Water Meters-Selection, Installation, and Testing; Manual of Water Supply Practices-M6, published by the American Water Works Association (AWWA) guidelines and best practices.

5.2.2 Scope

Obtain listing of utility accounts to determine breakdown for sample selection:

- Develop sample selection quantity based off of data provided by utility.
- Randomly select small water meters for targeted testing.
- Survey large water meters and determine if conditions permit testing.
- Remove targeted small meter and replace with new meter.
- Group test small meters flow rates in line.
- Inline / in-place test large meters.
- All tests will use comparison testing method using calibrated test meter.
- Input test results into audit spreadsheet.
- Apply test results to sample selection categories to determine meter efficiency for selected category.
- Apply consumption to each sample category based off of information provided by utility.
- Using rate information and efficiency of meter, determine loss of revenue due to meter accuracy per category.
- Combine total lost revenue in analysis.

RTS preformed the meter testing. The procedure for this test can be found in **Appendix-E**.

5.3 Sample Size

M&V cost can be made significantly lower by sampling. The meter audit incorporated taking a sample population representing small, intermediate, and large meters. The sample size for meter population above 2,500, a level of confidence of 90% and a precision of 10% was selected. For populations below 2,500 meters a confidence level of 90%, precision of 20%. An initial Coefficient of Variance (Cv) of 0.5 was applied. The samples sizes are tabulated below following FEMP values (see **Appendix-F**):

Table 5.1: Meter Test Sample Size

Meter Size	QTY	Confidence-Precision
¾"	68	90-10
1"	17	90-20
1½ "	17	90-20
2"	17	90-20
3"	0	-
4"	9	80-20
6"	0	-
8"	0	-
Total	**128**	

During the preliminary survey, 163 meters 3" and greater were surveyed. The majority of these large commercial meters were located in pits that were covered with dirt and were difficult to access. These meters did not have the valves required for testing in place and many of the isolation valves did not appear operational. Because of these concerns, the cost of removing the large commercial meters and testing, along with the cost impact on local business, and the overall percent of water consumption and revenue, it was not economically viable to test a large amount of these meters.

5.4 Flow Rates

Meters were divided into groups by size. Each meter was tested at various flow rates measured in Gallons per Minute (GPM). The flow rates varied depending on meter size. Typically Minimum, Intermediate, Cross over, and maximum rates were recorded. The quantity of water was measured in gallons and varied depending on the meter size. A Weighted Factor (WF) for each flow rate was selected per the following tables.

Table 5.2: Flow Rate Weighted Factors (WF)

Meter Size	Low Flow	Inter. Flow	High Flow
¾" – 2"	20%	65%	15%

Meter Size	Low Flow	Inter. Flow	Cross Flow	High Flow
4"	20%	35%	25%	20%

The accuracy (%) was calculated by dividing *meter indicated quantity* by the *actual quantity* recorded by the calibrated meter as follows:

$$Accuracy = \frac{meter\ indicated\ Qty}{actual\ Qty} \qquad \text{EQ-1}$$

5.5 Field Test and Results

The results of the test for each meter size along with meter location and Weighted Average Accuracy (WAA) and details are available in **Appendix G-Meter Test Results**. The below charts summarize the test results. The 4" meters were the least accurate, followed by the 2" and then ¾" meters.

Table 5.3: Meter Accuracy Test Results

Meter Size	Low Flow	Inter. Flow	High Flow	WAA
¾"	52.4%	97.1%	87.3%	86.8%
1"	93.9%	97.8%	88.9%	95.7%
1 ½"	88.3%	97.5%	96.1%	95.4%
2"	61.2%	89.2%	96.3%	84.6%

Meter Size	Low Flow	Inter. Flow	Cross Flow	High Flow	WAA
4"	43.1%	63.1%	77.7%	84.5%	67.0%

Six measurements were omitted from the ¾" meter test results because of very low measurements. With these included the WAA is 80.7%. The WWA without these measurements, a more conservative number, of 86.8% was used for the savings calculations. One 1-1/2" meter measurement was also omitted due to very low recordings and the WWA with this meter included was 90.0% versus 95.4% used for the calculations; again this was a more conservative number.

5.6 Statistical Analysis

The Cv is the standard deviation of a distribution expressed as a percent of the mean. An initial Cv value of 0.5 was selected. Using the test results the actual Cv values were calculated and all are lower than the initial value as shown in the table below. For ¾" meters there is a 90% confidence that the true mean value of 67 observations is 80.7% accurate +/-5.8%. In other words, the margin of error of the mean estimation is +/-5.8% with a 90%confidence interval. These results fall within the parameters set in the sample size selection.

Table 5.4: Meter Accuraccy Test Results-stastistical Analysis

Meter Size	QTY	Confidence-Precision	Cv	WAA Mean (%)	Relative Precision (+/-)
¾"	67	90/10	0.284	80.7	5.8%
1"	23	90/20	0.041	95.7	1.5%
1½ "	17	90/10	0.243	90.0	10.3%
2"	17	90/10	0.110	86.0	4.7%
4"	9	80/20	0.421	67.0	19.6%

As stated previously, for the meter accuracy calculation six ¾" and one 1-1/2" were omitted. These measurements were used in the statistical analysis above and additional calculations are available in **Appendix-J** Statistical Analysis.

6.0 Revenue and Cost Savings

YESCO does not guarantee a revenue increase from replacing the water meters. YESCO does guarantee new meter average accuracy of at least 98.5 percent, in accordance with meter maintenance warranty and for the term outlined in the warranty documents.

6.1 Methodology

The total revenue and cost savings from replacing the water meters and installing the new system comes from the following:

- Increase in water and sewer revenue from more accurate meters.
- Reduction in billing errors and estimated consumptions.
- Reassignment of meter readers.
- Capital cost from replacing and repairing an antiquated system.
- Reduction of Clerical staff.

6.2 Baseline

The **baseline** is a stipulated value mutually agreed upon between the City of Roswell and YESCO. The baseline was calculated using metered consumption values the City provided. If a large number of meters are not being recorded and/or estimated then this may create an inaccurate baseline and affect the proposed project revenue. From the meter audit sample a large percent of residential and commercial boxes surveyed were unreadable. The City should take this into consideration when establishing a stipulated baseline.

From the data provided the billed consumption for water and sewer were different therefore separate baselines for water and sewer were established.

6.3 Baseline Adjustments

If the City of Roswell makes changes to their system or consumption is lowered, adjustments to the baseline will be made. This adjustment may be as a result, but not limited to the following:

- Change in population.
- Anything causing a reduction in consumption.
- Meter type population changes.
- Reduction of clerical staff.

6.4 Proposed Revenue

A pre-retrofit water meter audit was conducted on a statistical sample of meters selected at random depending on meter size as explained previously. The new meter accuracy is 100% +/- 1.5%. YESCO will guarantee an average of 98.5% accuracy on meters tested during the post retrofit M&V. The meter consumption water gained will come from the difference in the current meter accuracy and the new meter accuracy.

As shown in section 3.1, the average of the two years (2014-2015) was used to establish the **Baseline Average.** The City water rate base charge includes the first 3 kGal and was reduced from the baseline to establish the **Consumption (CNS) Above the Base Charge** and this represents metered water billed to customers as shown in the following equation:

EQ-2: $CNS\ Above\ Base\ Charge\ (kGal) = Baseline - 3\ kGal\ Included\ in\ Base\ Charge$

The actual amount of water that currently flows through the meter was calculated as follows:

EQ-3: $Actual\ CNS\ (kGal) = \frac{Existing\ Metered\ CNS}{Existing\ Meter\ Accuracy}$

The metered consumption after new meter installation is calculated as follows:

EQ-4: $New\ CNS = Existing\ Actual\ CNS\ (kGal)\ x\ New\ Meter\ Accuracy\ (98.5\%)$

The Water Gain is calculated As follows:

EQ-5: $Water\ Gain = (New - Existing)\ CNS\ above\ 3kGal\ (kGal)$

The billed consumption above the base rate is calculated as shown in EQ-2. The metered water gain is the difference between the original billed and new Meter CNS above 3 kGal. The calculations were performed on each account for each month for 2014-2015. This data is available in **Appendix-B** and summarized in **Appendix-H**. The table below is a summary of the calculations. The metered water baseline consumption is 2,781,234 kGal and is the average of the years 2014 and 2015. The consumption above 3kGal is 2,230,670 kGal and represents the amount billed above the base charge. The actual consumption is 3,254,899 kGal and the consumption with new 98.5% accurate meters is 3,206,076 kGal. The anticipated consumption above 3 kGal with the new meters is 2,647,172 kGal. The difference between the old and new meter consumption, the metered water gain, is 416,499 kGal.

Table 6.1: Meter Water Gain (kGal)

Existing					New			
Meter Size	Metered CNS	CNS Above 3 kGal (EQ-2)	Meter Accuracy	Actual CNS (EQ-3)	Meter Accuracy	CNS (EQ-4)	CNS Above 3 kGal (EQ-2)	Water Grain (EQ-5)
¾"	1,463,993	1,028,515	**86.8%**	1,687,167	**98.5%**	1,661,859	1,218,493	**189,977**
1"	393,272	327,580	**95.7%**	410,903	**98.5%**	404,739	338,853	**11,273**
1½ "	270,621	239,150	**95.4%**	283,593	**98.5%**	279,339	247,778	**8,628**
2"	326,965	313,124	**84.6%**	386,308	**98.5%**	380,513	366,543	**53,419**
3"	121,201	118,399	**67.0%**	180,818	**98.5%**	178,106	175,271	**56,872**
4"	157,188	156,161	**67.0%**	234,507	**98.5%**	230,990	229,957	**73,796**
6"	47,995	47,743	**67.0%**	71,603	**98.5%**	70,529	70,277	**22,534**
8"	-	-	**67.0%**	-	**98.5%**	-	-	**-**
Total	**2,781,234**	**2,230,673**		**3,254,899**	**Grand Total**	**3,206,076**	**2,647,172**	**416,499**

The increase in City revenue as a result of the Metered Water Gain is calculated as follows:

EQ-6: $Revenue\ Increase\ (\$) = Meter\ Water\ Gain\ (kGal) x\ Rate\ Per\ Gallon(\frac{\$}{kGal})$

The City rate structure charges two rates, City Service and County Service (double the City Service rate). The County service accounts represent less than 1% of the all accounts. For this reason, the lower 2016 City Service rate of $1.96/kGal was used for the analysis and is a more conservative calculation.

The City will see an $816,338 increase in water revenue per year as shown in the table below. The largest increase in revenue, $372,356, is from the ¾" meters. The 2" and above meters represent $404,976 increase in revenue.

Table 6.2: Water Revenue Increase

Meter Size	Meter Water Gain (kGal)	2016 Water Rate ($/kGal)	Revenue Increase
¾"	189,977	$1.96	**$372,356**
1"	11,273	$1.96	**$22,095**
1½ "	8,628	$1.96	**$16,911**
2"	53,419	$1.96	**$104,701**
3"	56,872	$1.96	**$111,468**
4"	73,796	$1.96	**$144,640**
6"	22,534	$1.96	**$44,167**
8"	-	$1.96	**$0**
Total	**416,499**		**$816,338**

Sewer revenue increase is calculated using the same methodology used for water, except sewer base rate does not include the first 3k Gal, sewer is charged at a flat rate for every kGal consumed, and the monthly consumption amount billed is the average of three months. The gain from increased meter accuracy for sewer is 239,676 kGal (based on baseline consumption).

Table 6.3: Meter Sewer Gain (kGal)

Existing				New		
Meter Size	Baseline	Meter Accuracy	Actual CNS	Meter Accuracy	CNS	Meter Grain
¾"	869,530	86.8%	1,002,083	98.5%	987,051	**117,521**
1"	183,304	95.7%	191,522	98.5%	188,649	**5,345**
1½ "	136,540	95.4%	143,086	98.5%	140,939	**4,399**
2"	182,920	84.6%	216,119	98.5%	212,878	**29,957**
3"	81,247	67.0%	121,211	98.5%	119,393	**38,146**
4"	67,262	67.0%	100,348	98.5%	98,843	**31,581**
6"	27,106	67.0%	40,439	98.5%	39,833	**12,727**
8"	-	67.0%	-	98.5%	-	**-**
Total	**1,547,910**		**1,814,808**		**1,787,586**	**239,676**

The increase in metered water through new meters, and using 2016 sewer rate of $1.44/kGal will translate to a $345,134 revenue gain as shown in the next table. This figure is based on current methodology for figuring sewer consumption (3 month average). The largest increase of this, $169,230 will come from the ¾" meters.

Table 6.4: Sewer Revenue Increase

Meter Size	Meter Water Gain (kGal)	2016 Water Rate ($/kGal)	Revenue Increase
¾"	117,521	$1.44	**$169,230**
1"	5,345	$1.44	**$7,697**
1½ "	4,399	$1.44	**$6,335**
2"	29,957	$1.44	**$43,139**
3"	38,146	$1.44	**$54,931**
4"	31,581	$1.44	**$45,476**
6"	12,727	$1.44	**$18,326**
8"	-	$1.44	**$0**
Total	**239,676**		**$345,134**

As stated previously the total anticipated increase of revenue for water is $816,338 and sewer $345,134 for a total revenue increase of $1,161,472, as summarized in the table below.

Table 6.5: Summary of Revenue Increase

Meter Size	Water	Sewer	Total	%
¾"	$372,356	$169,230	**$541,586**	46.6%
1"	$22,095	$7,697	**$29,792**	2.6%
1½ "	$16,911	$6,335	**$23,245**	2.0%
2"	$104,701	$43,139	**$147,840**	12.7%
3"	$111,468	$54,931	**$166,399**	14.3%
4"	$144,640	$45,476	**$190,116**	16.4%
6"	$44,167	$18,326	**$62,493**	5.4%
8"	$0	$0	**$0**	
Total	**$816,338**	**$345,134**	**$1,161,472**	**100%**

The ¾" meters represent 46.6% percent of this increase, followed by the 4" meters at 16.4%, 3" at 14.3%, and 2" at 12.7%. The 1" and 1 ½" represent less than 3% each.

6.5 Operation & Maintenance (O&M) Savings

YESCO and the city have stipulated Operations and Maintenance (O&M) savings. YESCO does not guarantee these savings. These included annual savings due to the efficiencies gained with this system. These efficiencies fall into a number of Categories: A) Meter reading and administrative efficiencies, B) Savings for the cost of future meter replacement, and C) Lower shut off-turn on cost.

The savings for each category are as follows:

6.5.1 Meter reading and Administrative Savings

The new system will require fewer employees to collect and analyze the consumption and billing data. This will also reduce the amount of vehicles previously used by meter readers. This will reduce the departments operational cost and allow the city to relocate employees to other important duties. The Water Department employs six office personal, five meter readers, and two employees dedicated to shut offs (**see section 6.5.4 for employee shut off savings**) that are payed $12.50 an hour for Office Salary and $13.50 an hour for Meter Readers with 41% overhead. They are payed for 2,080 hours a year for a total of $417,924 a year as shown below.

Table 6.6: Current Employee Cost

	Empl.	Salary	OHD	Cost	Cost/Yr.
	#	$/Hr.	%	$/Hr.	Cost/Yr.
Office	6	$12.50	41%	$17.63	**$219,960**
Readers	5	$13.50	41%	$19.04	**$197,964**
Total	11				**$417,924**

Labor = 40 Hr./Wk. x 52 Wk./Yr. = 2080 Hr./Yr.

After installation of the new meter system the office will reduce to three employees' and two field employees that will maintain the system. The new annual cost will be $197,964 a year (see Table 6.7).

Table 6.7: Future Employee Cost

	Empl.	Salary	OHD	Cost	Cost/Yr.
	#	$/Hr.	%	$/Hr.	Cost/Yr.
Office	3	$12.50	41%	$17.63	**$109,980**
Readers	2	$15.00	41%	$21.15	**$87,984**
Total	5				**$197,964**

As shown in the table below the current annual cost are $417,924 a year, the future cost will reduce to $197,964 for an annual savings of $219,960, as shown in the table below.

Table 6.8 Annual Employee Cost and Savings

	$/Yr.
Current	$417,924
Future	$197,964
Savings	**$219,960**

6.5.2 Vehicle Savings

Additional savings will be realized from the reduction in vehicles used by the meter readers. The City plans to reduce from six vehicles to two vehicles. Data provided by the City was used to calculate the savings and is tabulated below. The anticipated savings is $56,576 per year.

Table 6.9: Annual Vehicle Savings

	Vehicles	Cost	Operation	Cost
	#	$/Hr.	Hr.	Cost/Yr.
Current	6	$6.80	2,080	**$84,864**
Post Retrofit	2	$6.80	2,080	**$28,288**
Savings	4			**$56,576**

Labor = 40 Hr./Wl x 52 Wk/Yr. = 2080 Hr./Yr.

6.5.3 Savings for the cost of future new meter replacement

The small meter warranty is for the life of the project and large meter warrant is for five years. The City estimates they replace 300 small meters and 25 large meters per year. The annual savings for the small meters is$90,000 and large meters $62,500, totaling $152,500.

Table 6.10: Annual Meter Replacement Savings

	Meter	Replacement	Savings
	QTY	$/Meter	
Small	300	$300	$90,000
Large	25	$2,500	$62,500
Total			**$152,500**

At the end of the fifth year the City will have to begin replacing/repairing large meters.

6.5.4 Account Shut Off/On Savings

Two annual full time employee turn off or on a delinquent account. Using the previous labor and vehicle rates the cost savings are $107,494.

Table 6.11: Meter Shut Off Cost

	Time	Employee		Truck		Total
	Hr./Yr.	#	$/Hr.	#	$/Hr.	$/Hr.
Savings	2,080	2	$19.04	2	$6.80	$107,494

6.5.5 Summary of O&M Savings

The following table is a summary of the savings previously explained. The total annual O&M savings for each of the first five years is $536,530. After the fifth year, the meter replacement will be reduced, for large meters, by $62,500 a year for a total annual savings of $474,030.

Table 6.13: Summary of O&M Savings

O&M	Savings $/Yr.
Employee	$219,960
Vehicle	$56,576
Meter Replacement	$152,500
Shut Offs	$107,494
First Five Yr.	$536,530
After Five Yr.	$474,030

6.6 Summary of Revenue and Savings

The table below summarizes the revenue increases which are $816,388 (water) and $345,134 (sewer), totaling $1,161,472. With the $536,530 O&M savings the total savings / increase in revenue is $1,698,002 a year.

Table 6.14: Summary of Revenue and Savings

Summary	Savings $/Yr.
*Water and Sewer Revenue	$1,161,472
O&M Savings	$536,530
Total	**$1,698,002**

*First five years

7.0 Retrofit

The City of Roswell and YESCO have analyzed the existing water meter system. The City has decided, with YESCO's recommendation, to install new meters with an Advanced Meter Infrastructure (AMI) system and billing software. This will eliminate the requirement for manual meter consumption reading and data input by City employees that can lead to errors. This will reduce employee work load and allow the City to relocate employees to other important task. The new accurate meters will allow the City to increase its revenue.

7.1 Scope of Work

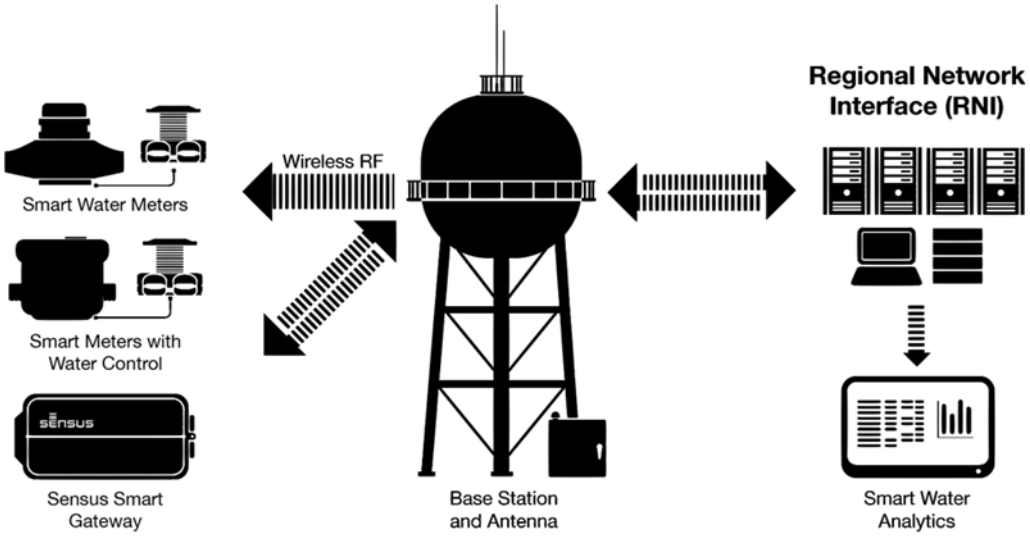
This scope of this retrofit includes replacing 19,385 meters (per City, all active and inactive accounts) and installing a fixed base AMI system.

7.2 Advanced Meter Infrastructure (AMI) System Installation

(Vender has not been selected and the equipment is for reference only)

YESCO will install a turnkey fixed base AMI system. The new meters and infrastructure will be compatible with the AMI system. YESCO assumes that the City will allow installation of data collectors, repeaters, and antenna's on City structures at no cost. This will be done with accordance to a propagation study (See **Appendix-Q**). YESCO will perform a full commissioning of the AMI system that will include network and software integration, along with training.

Table 7.1: AMI System



(Sensus)

The system will utilize two Sensus Basestations to be installed at designated locations within the City. The SmartPoint 520 M Transmitter that is attached to each meter within the City Utility System will send read and alarm information to the M400 Basestation every 4-6 hours. That information is sent via cellular modem, fiber or another form of Backhaul communication

to the Sensus hosted servers. The information is then made available via web access to a designated URL assigned to the City by Sensus.

The Sensus FlexNet AMI system will use FCC licensed frequency. By using FCC protected, extended range frequencies, the FlexNet AMI system provides risk mitigation to protect the AMI investment by avoiding obsolescence over a 20-year operating horizon. FlexNet endpoints and base stations use software-defined radios, that are field proven and permit future advancements in radio modulations and RF spectrum.

The FlexNet AMI system allocates separate channels within the RF spectrum for revenue integrity messaging, e.g., alarm reporting, outage and restoral communications, and DA data transmissions. Spectrum channelization gives the City the ability to implement application-specific solutions and eliminate latency concerns related to competing metering data transmissions.

Sensus has successfully deployed or is in the process of deploying 325 fixed-base FlexNet water-only projects. FlexNet can deliver a full two watts (twice the output of unlicensed RF technologies) of transmission power from each water endpoint. Therefore, two-way water AMI is enabled reliably via communications directly between the water endpoints and the network. This point-to-multipoint architecture is much more reliable than a battery powered water endpoint participate in an electric mesh network. With FlexNet, water meter communications are maintained during power outages.

AMI System Annual Maintenance Service/Computers and software/Training

The City will be required to contract an annual service for the maintenance of the AMI system at an estimated cost of $51,000 per year (based on current population of meters). The City will be responsible for these cost and cannot be included in the project cost because they are considered annual fees, and cannot be financed up front. These cost are included in the economic analysis. See **Appendix-S for AMI Agreement**.

7.3 Remote Shut-Off Valve

These valves give the City access and control over water flow to a customer property from the City office. This would allow the City to stop water loses and damage caused by leaking or broken pipes. The City could turn on/off delinquent accounts without sending workers on from the City offices reducing cost.

7.3 Water Meter Replacement

(Vender has not been selected and the equipment is for reference only)

YESCO will remove existing meter and install like for like meter size. The meter quantity to be replaced is based on total meter population to include "inactive Accounts" (information provided by the City) is as follows:

Table 7.1: List of Meter Replacement

Meter Size	QTY	Meter Replacement Type	
¾"	15,424	*Sensus Ally	Magnetic
1"	2,235	Sensus iPERL	Magnetic
1½ "	1,077	Sensus OMNI	Mechanical
2"	487	Sensus OMNI	Mechanical
3"	112	Sensus OMNI	Mechanical
4"	37	Sensus OMNI	Mechanical
6"	12	Sensus OMNI	Mechanical
8"	1	Sensus OMNI	Mechanical
Total	**19,385**		

*Remote Shut-Off

* ¾" meters (15,424) will include remote shut off valves.

General scope of work for meter replacement will follow:

- Remove existing meter and install like for like meter size. Based on information from City, differences in size or quantities will be addressed through change order orders or by use of contingency.
- Spool pieces which may be necessary to complete installation (included).
- Installation of new rubber meter gasket. Installation of new bolts if necessary.
- Drilling of cast iron lids for transmitter.
- Remove all job related debris.
- YESCO will repair any customer service lines within 16" of meter pit if damage was caused by YESCO personnel.
- Any preexisting condition that prevents YESCO personnel from replacing the meter will be documented and returned to the city for repair or repaired by YESCO for additional cost.
- Management of meters removed from the field, including recycling of old meters.
- Digital photographs of exceptions identified in the field.
- Programing of all meters.
- GPS coordinate collection.
- Data formatting to allow for automatic uploading in utility billing system.

- YESCO will provide training upon project completion, and has shown one annual training cost provided by manufacturer in cash flow.

The following are excluded from the scope of work:

- Additional installation beyond the above quoted quantities and sizes.
- Any plumbing of meter sets not identified on Scope of Work will be an additional charge based on time and material.
- Any water line damage before the meter valve will be the responsibility of the City unless caused by YESCO.
- Any parts and labor required to repair damaged City line will be the responsibility of the City.
- Any preexisting condition that prevents YESCO personnel from replacing the meter will be documented and returned to the City for repair (including corroded lines beyond serviceability).
- Any parts required to repair existing damaged line will be the responsibility of the City or provided at additional charge of cost + 15%. This only applies to pre-existing conditions, not caused by YESCO personnel.
- Any re-plumbing of meter sets will be an additional charge based on time and material.
- Any water line damage before the meter valve will be the responsibility of the City.
- Repair or correction of any pre-existing code violations.
- Re-pluming of meter connections. Assumes like for like meter exchange.
- Repair of any pluming breaks due to corrosion or poor maintenance will be additional charge.
- Replacement of any vaults or lids will be additional cost.
- Installation of check valves or other back flow valves.
- YESCO will perform all task with reasonable care.

General:

- City will provide location addresses of meters to be replaced per the quantity in **Table 7.1** List of Meter Replacement.
- Project will be completed in a single mobilization and is expected to be completed in 12 months.
- YESCO will pick-up all products from a central location (protected material storage location provided by City). Storage containers will be provided by YESCO.
- YESCO will provide the City with a meter reading from old meter at the time the new meter is installed. The City will be responsible for using this meter reading for billing purposes and then entering a “zero” reading for the new meter.

- YESCO will collect and tag old meters, as well as temporarily store the old meters. Old meters will be stored such that it is possible to retrieve a given meter in the event the City needs to verify old meter reading.
- YESCO will collect required installation data for upload into the city's billing system.
- YESCO will deliver installation data to City personnel so personnel can upload installation data to their billing system.
- Over the duration of the project, some service locations may be turned back to the City for repair if the meter service is deemed "inaccessible." Once the repair is made by the City, YESCO will return and install the new meter and AMR transmitter using normal installation techniques.
- "Inaccessible" is:
    - Location where a faulty valve prevents YESCO from shutting off the water to the facility.
    - Location were the meter flange or coupling is located outside of the meter pit.
    - Locations that cannot be reached and require that the lid ring and/or meter pit to be removed.
    - Meters where the City's customer prevents YESCO from accessing the meter.
- Services turned back to the City for repairs/remedy are assumed to be corrected in a timely fashion. If corrections are not made, it is assumed the required metering products (meter, register, and transmitter) will be turned over to a representatives of the City for installation at their convenience.
- YESCO will work closely with the City to develop a sequence for executing this project.

7.4 Project Specifications and Warranty

Workmanship Warranty of installation services is for a period of one year from date of installation as specified in **Appendix-L**.

Installation of all material is guaranteed per manufacture warranty as specified in **Appendix-L**. No other warranty expressed or implied will apply to meter warranty or accuracy.

See **Appendix-R** for Equipment Specifications.

City of Roswell is responsible for meter replacement after manufacturer warranty expires.

8.0 Post retrofit Measurements & Verification

A post-retrofit sample quantity will be selected and measured. The measurements and calculations will use the same methodology explained in the meter audit.

YESCO will provide the M&V Services set forth below:

A. Within 60 days of each anniversary of the commencement of the term, YESCO will undertake the following testing activities to verify the accuracy of the meters set forth in the table below:

1. Clean meter location/setting.
2. Visually inspect location/setting for indications of water leakage.
3. Remove meter, and test on site.
4. The City shall be responsible to replace any damaged and/or inaccurate meters not in the test set, as set forth in contract, as well as those in the test set, to the extent damage and/or inaccuracy is caused by factors other than normal wear and tear.
5. Test the same quantity of meters tested during the meter audit as shown in Table 5.1-Meter Test Sample Size.
6. Provide a report based on the findings above.

If 90 % or more of the meters tested fail to meet meter accuracy warranty, YESCO will provide a new meter to be installed by City personnel at City's expenses for those meters which failed to meet accuracy.

The annual cost of the M&V services is $50,000 a year and will escalate as shown in the economic analysis. The City will be responsible for the M&V cost and cannot be included in the project cost because they are considered annual fees, and cannot be financed up front. These cost are included in the economic analysis.

9.0 Economic Analysis

Is subject to change based on final financial package.

The determination of appropriate proposed project for actual implementation is a result of the economic analysis. This can be determined by the simple payback which is investment cost divided by the first year revenue increase and O&M savings. The total project cost is $19,467,887 (not including NMGRT). The revenue increase and savings are $1,698,001 and thus calculated to a simple payback of 11.5 years.

Chart 9.1: Simple Payback

Project Cost	$19,467,887
Project Total Savings	$1,698,001
Simple Payback	**11.5 Years**

An economic analysis that included escalation rates was also performed, graphed below, and tabulated in **Appendix-K**. The cash flow analysis included savings as follows:

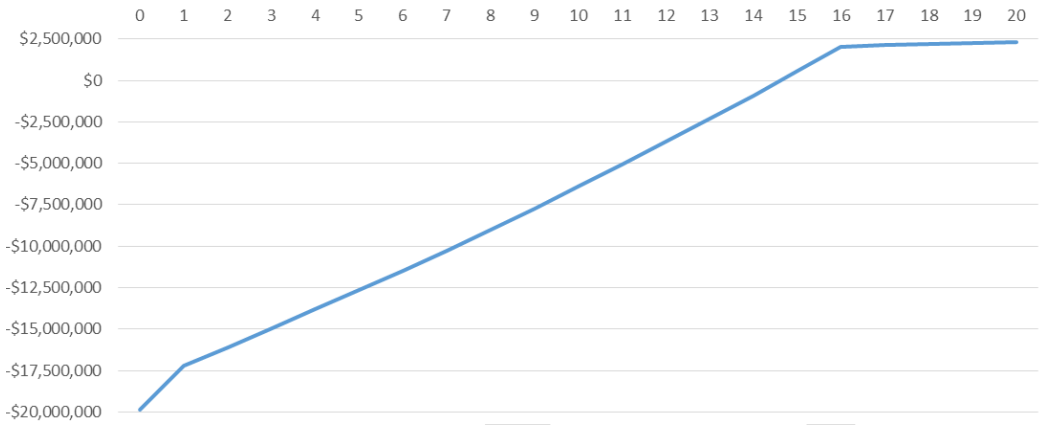
- Water and sewer baseline consumption above 3 kGal de-escalation of 7% for the first two years and 2% after through year twenty and this is due to the lower consumption trend.
- Billing rate increase +3.8%. This was calculated using Bureau of Labor Statistics Consumer Expenditure Survey (2) data from 2004 through 2014 (See **Appendix-P**).
- Small Meter degradation of 0.5% from year 10 through 20 and large meter degradation at years six through 20, as large meters degrade quicker than small meters.
- O&M saving escalation of 3.8%.
- Large meter revenue generation was reduced starting at year six.

The cost included the following:

- Simple amortization of project cost with annual interest rate of 2% over a loan period of 16 years with $1,462,489 annual payment.
- Annual M&V cost of $50,000 with 3.8% escalation.
- Annual AMI system maintenance of $51,000 with 3.8% escalation.

As shown in the graph below the loan is paid in complete after 16 years and the City savings will be $2,029,275 a year and slightly escalate after.

Chart 9.1: Project Cash Flow with Escalation



The total revenue and saving is $39,807,083, with escalation, over 20 years. The project cost (investment) is $25,961,282. The Return on Investment (ROI) calculated to 53% as shown in the table below.

Chart 9.2: Return on Investment

Total Revenue & Savings	$39,807,083
Investment	$25,961,282
ROI	**53%**

The table above includes the annual AMI system maintenance fee ($51,000 per year, escalating after year 1) and M&V ($50,000 per year, escalating after year 1) the City will be responsible for. These cannot be included in the project cost because they are considered annual fees, and cannot be financed up front. These cost are included in the economic analysis.

10.0 Customer Responsibilities

In order for YESCO to perform its obligations under this Agreement with respect to the Work, the Assured Performance Guarantee, and the M&V Services, Customer shall be responsible for:

A. Providing YESCO, its subcontractors, and its agents reasonable and safe access to all facilities and properties that are subject to the Work and/or M&V Services.

B. Providing for shut down and scheduling of affected locations during installation, including timely shutdowns of chilled water and hot water systems as needed to accomplish the Work and/or M&V Services.

C. Providing timely reviews and approvals of design submissions, proposed change orders, and other project documents.

D. Providing the following information with respect to the project and project site as soon as practicable following YESCO's request:

1. Surveys describing the property, boundaries, topography and reference points for use during construction, including existing service and utility lines;
2. The City will provide existing Geotechnical studies (if available) describing subsurface conditions and other surveys describing other latent or concealed physical conditions at the project site;
3. Temporary and permanent easements, zoning and other requirements, and encumbrances affecting land use, or necessary to permit the proper design and construction of the project and enable YESCO to perform the Work;
4. A legal description of the project site;
5. Existing as-built and record drawings (if available) of any existing structures at the project site; and
6. Existing environmental studies (if available), reports, and impact statements describing the environmental conditions, including hazardous conditions or materials, in existence at the project site.

E. Securing and executing all necessary agreements with adjacent land or property owners that are necessary to enable YESCO to perform the Work.

F. Providing assistance to YESCO in obtaining any permits, approvals, and licenses that are YESCO's responsibility to obtain as set forth in contract.

G. Obtaining any permits, approvals, and licenses that are necessary for the performance of the Work and are not YESCO's responsibility to obtain as set forth in contract

H. Properly maintaining, and performing appropriate preventative maintenance on, all equipment and associated metering systems affecting the Assured Performance Guarantee in accordance with manufacturers' standards and specifications.

I. Providing the utility bills, reports, and similar information reasonably necessary for administering YESCO's obligations under the M&V contract within five (5) days of Customer receipt and/or generation or YESCO's request therefor.

J. Providing all records relating to energy and/or water usage and related maintenance of the premises and relevant equipment requested by YESCO.

K. Promptly notifying YESCO of any change in use or condition described in contract or any other matter that may impact the Performance Guarantee.

L. Taking all actions reasonably necessary to achieve the Non-Measured Project Benefits.

In addition to the foregoing, Customer is responsible for the items set forth below in connection with utility meter projects:

A. Customer must maintain and service the meters properly in accordance with the AWWA M6 Manual guidelines for maintenance and testing. The maintenance and testing must be clearly documented.

B. Isolating the utility system to allow for meter/valve change out, including identification of all shut-off valves.

C. Scheduling shutdowns, downtimes, and relocation of new commercial vaults.

D. All commercial or water critical accounts will be notified prior to installation. Overall customer notification is the responsibility of the City.

E. Traffic safety during installation.

F. Ongoing care and maintenance of the utility system, including all meters, AMI equipment and systems, meter boxes, and meter vaults at or above manufacturers' specifications and recommendations.

G. The City will implement the leak detection program under the training and guidance of the program to be co-developed.

The City will be responsible for the annual AMI system maintenance fee ($51,000 per year) and M&V ($50,000 a year) cost. The City will be responsible for these cost and cannot be included in the project cost because they are considered annual fees, and cannot be financed up front. These costs are included in the economic analysis.

11.0 Leak Detection Program

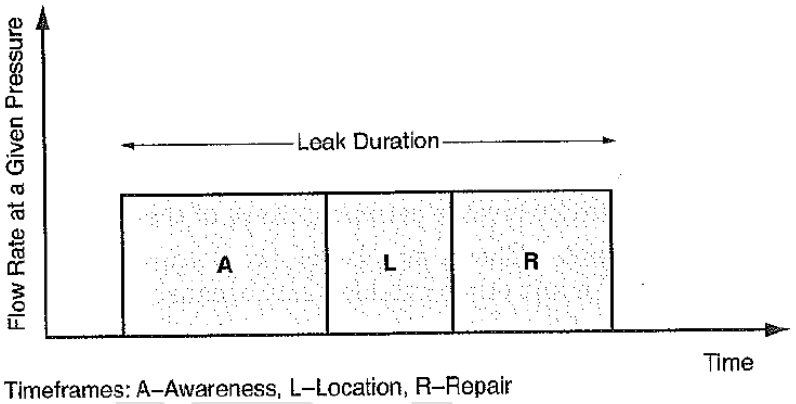
11.1 Methodology

There are a number of ways to control water losses and they include the following:

- Pressure management
- Pipeline and asset management
- Speed and quality of repairs
- Active leakage control

This program will focus on developing the latter three.

First, the magnitude of water lost with regard to leaks is a function of the time it takes to become aware of a leak, locate, and repair the leak (ALR) multiplied by the leak rate as shown below.



Timeframes: A–Awareness, L–Location, R–Repair

(AWWA M-36)(2)

Typically the longest period is the awareness a leak is acquiring in the system and then finding the exact location. The awareness of a leak can be from a number of sources such as increased billed consumption, costumer reporting, or active leak detection. The new data collecting system will allow the tracking and analysis of customer consumption and flag abnormalities in increased usage. This would reduce detection time and locate costumers with leakage, which the current system does not do.

Second, according to the AWWA Water Audits and Loss Control Programs Manual of Water Supply Practices M36, “for many utility, most leakage losses over the course of a year occur from unreported leaks” (1). The economic restraint minimizes active leak detection. Considering the large geographical size of the City and the distance of it’s out of town customers this limits the length of pipe line and fixtures that the current leak detection is performed. According to AWWA M36 “it is best to have leak detection capabilities on a regular basis” (2). The new, faster, AMI reading will allow the City to allocate resources and personnel

to an 'in house' leak detection program through the use of acoustical leak detection equipment. This will allow additional pipe linage to be audited and problematic area's revisited. This is a proactive approach for the detection of unreported real loses (URL) that are not visible from above ground through the use of acoustical equipment.

The new AMI with data analysis capabilities, along with a leak detection program will allow the City to allocate resources to locate leaks and improve the ALR that will lead to the ultimate goal of water conservation.

11.2 Customer Responsibility

The City will be responsible in providing the following:

- Co-develop and organize with YESCO a leak detection program according to the AWWA, Water Audits and Loss Control Programs, Manual of Water Supply Practices M-36, Chapter 5-Contolling Real Losses: Leakage and Pressure Management, Organizing a leak detection program. Pages 141-156 (see **Appendices-M**).
- Purchase/Rent leak detection equipment.
- Train personnel in leak detection.
- Allocate two trained employees two days a week to leak detection. From estimations teams should be able to survey two miles of pipeline per day.
- Use trained employees to perform leak detection on all accounts flagged.
- Report this via a Leak Detection Survey daily Log (see **Appendices-N**). Complete a Leak Report of leaks encountered and repaired. This would include both leaks detected through the leak detection program and account flagged through the new metering system.
- The City will be responsible for repairing leaks where feasible.

YESCO and the City will develop spreadsheets and a report format. The City will submit these reports with calculation on a monthly basis.

11.3 Measurement and Verification Reporting

YESCO will provide an annual report that quantifies the amount of leaks detected along with the volume of water conserved through the leak detection program. In order for YESCO to complete this report the City will provide on a monthly basis the following:

1. Leak Detection Survey Daily Log (see **Appendices-N**) that will include the extent of work performed on a daily basis to detect leaks.
2. Leak Report stating location, leak class, and leak rate with calculated water loss.

References

1. AWWA,2009, Third addition, Manual M36, Water Audits and Loss Control Programs, Manual of Water supply Practices. Denver, Co. American Water Works Association.

2. Bureau of Labor Statistics Consumer Expenditure Survey Series ID CXUWATERLB0101M, Water and other public services.
http://data.bls.gov/pdq/querytool.jsp?survey=cx

Appendices

Appendix A-Water Balance

2014

Month		Water System Wells Total Water Produced (Gal)	City Metered CNS
1	Jan-14	224,077,000	145,946
2	Feb-14	220,707,000	156,807
3	Mar-14	335,780,000	196,502
4	Apr-14	416,346,000	266,495
5	May-14	454,819,000	329,342
6	Jun-14	498,598,000	338,532
7	Jul-14	524,211,000	323,219
8	Aug-14	367,663,000	312,463
9	Sep-14	328,862,000	276,737
10	Oct-14	296,413,000	211,722
11	Nov-14	233,699,000	182,352
12	Dec-14	194,499,000	173,116
Total (kGal)		**4,095,674**	**2,913,231**

2015

Month		Water System Wells Total Water Produced (Gal)	City Metered CNS
1	Jan-15	227,156,000	137,275
2	Feb-15	173,270,000	129,491
3	Mar-15	214,426,000	134,346
4	Apr-15	334,952,000	223,818
5	May-15	347,551,000	228,745
6	Jun-15	367,538,000	273,245
7	Jul-15	490,947,000	330,909
8	Aug-15	495,586,000	367,472
9	Sep-15	395,857,000	325,917
10	Oct-15	264,960,000	227,262
11	Nov-15	235,745,000	151,759
12	Dec-15	194,763,000	118,999
Total (kGal)		**3,742,751**	**2,649,237**

See Appendices-B Typical

2012 Monthly Water Production Reports

Draft Review With Budgetary Cost and Repayment

City of Roswell
Monthly Water Production Report
February 01, 2012 through February 29, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	61755	61755	0	0.00	0	0	N/A
KW2	RA-2084-X2	26	26	0	0.00	0	0	N/A
KW3	RA-2084-X3	24	24	0	0.00	0	0	N/A
KW4	RA-2084-X4	64	64	0	0.00	0	0	N/A
KW5	RA-2009-S4	2300514	2300514	0	0.00	0	0	N/A
KW6	RA-2009-S3	2161866	2161866	0	0.00	0	0	N/A
Kerr WellsTotal Water Produced				**0**	**0.00**			
TW1	RA-2823	51211	49934	1,277,000	3.92	0	0	N/A
TW2	RA-2823S	51911	50852	1,059,000	3.25	0	0	N/A
Trigg Wells Total Water Produced				**2,336,000**	**7.17**			
RW1	RA-2009	786417	785991	426,000	1.31	123	105	18
RW3	RA-2025	16797	5144	11,653,000	35.76	117	102	15
RW4	RA-2009S	1992850	1992615	235,000	0.72	0	0	N/A
RW5	RA-2009-S2	1679953	1679870	83,000	0.25	128	118	10
RIAC Wells Total Water Produced				**12,397,000**	**38.05**			
SMW10	RA-4253	827202	823005	4,197,000	12.88	0	0	N/A
SMW11	RA-4255	5922719	5922397	322,000	0.99	181	174	7
SMW18	RA-4253S	436301	395640	40,661,000	124.78	0	0	N/A
Six Mile Hill Wells Total Water Produced				**45,180,000**	**138.65**			
SRW12	RA-681	2886817	2886715	102,000	0.31	0	0	N/A
SRW13	RA-1823	6279553	6279005	548,000	1.68	0	0	N/A
SRW15	RA-977C	709317	707925	1,392,000	4.27	105	99	6
SRW16	RA-98S2	249613	236026	13,587,000	41.70	0	0	N/A
SRW17	RA-98S3	9757727	9662263	95,464,000	292.97	0	0	N/A
South of Roswell Wells Total Water Produced				**111,093,000**	**340.93**			
Water System Wells Total Water Produced				**171,006,000**	**524.80**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2164762	2161458	3,304,000	10.14			
Dow	RA-339B	1278216	1276357	60,576	0.19			
Joyce	RA-1127	19103	16603	81,463	0.25			
Parks Wells Total Water Produced				**3,446,038**	**10.58**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	0	0.00	0.00%
Trigg Wells	2,336,000	7.17	1.34%
RIAC Wells	12,397,000	38.05	7.11%
Six Mile Hill Wells	45,180,000	138.65	25.90%
South of Roswell Wells	111,093,000	340.93	63.68%
Park's Wells	3,446,038	10.58	1.98%
Combined Totals	**174,452,038**	**535.38**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	174,452,038	535.38
Park's Wells	3,446,038	10.58
Park's Meters	0	0.00
Golf Course Meters	0	0.00
Cemetery Meters	1,908,000	5.86
Water for Sale	**169,098,000**	**518.94**

	Gallons Produced
11/01/09 through 02/29/10	904,027,000
11/01/10 through 02/28/11	932,534,000
11/01/11 through 02/28/12	832,339,000
February 2010	188,218,000
February 2011	226,181,000
February 2012	171,006,000

City of Roswell
Monthly Water Production Report
January 01, 2012 through January 31, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	61755	61755	0	0.00	0	0	N/A
KW2	RA-2084-X2	26	26	0	0.00	0	0	N/A
KW3	RA-2084-X3	24	24	0	0.00	0	0	N/A
KW4	RA-2084-X4	64	64	0	0.00	0	0	N/A
KW5	RA-2009-S4	2300514	2300514	0	0.00	0	0	N/A
KW6	RA-2009-S3	2161866	2161866	0	0.00	0	0	N/A
Kerr WellsTotal Water Produced				**0**	**0.00**			
TW1	RA-2823	49934	49359	575,000	1.76	0	0	N/A
TW2	RA-2823S	50852	49494	1,358,000	4.17	0	0	N/A
Trigg Wells Total Water Produced				**1,933,000**	**5.93**			
RW1	RA-2009	785991	785921	70,000	0.21	121	104	17
RW3	RA-2025	5144	1868	3,276,000	10.05	117	101	16
RW4	RA-2009S	1992615	1992438	177,000	0.54	0	0	N/A
RW5	RA-2009-S2	1679870	1671299	8,571,000	26.30	126	118	8
RIAC Wells Total Water Produced				**12,094,000**	**37.12**			
SMW10	RA-4253	823005	777673	45,332,000	139.12	0	0	N/A
SMW11	RA-4255	5922397	5922129	268,000	0.82	180	172	8
SMW18	RA-4253S	395640	350247	45,393,000	139.31	0	0	N/A
Six Mile Hill Wells Total Water Produced				**90,993,000**	**279.25**			
SRW12	RA-681	2886715	2886642	73,000	0.22	0	0	N/A
SRW13	RA-1823	6279005	6278868	137,000	0.42	0	0	N/A
SRW15	RA-977C	707925	707725	200,000	0.61	104	99	5
SRW16	RA-98S2	236026	231603	4,423,000	13.57	0	0	N/A
SRW17	RA-98S3	9662263	9561169	101,094,000	310.25	0	0	N/A
South of Roswell Wells Total Water Produced				**105,927,000**	**325.08**			
Water System Wells Total Water Produced				**210,947,000**	**647.37**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2161458	2159335	2,123,000	6.52			
Dow	RA-339B	1276357	1275541	26,589	0.08			
Joyce	RA-1127	16603	13708	94,334	0.29			
Parks Wells Total Water Produced				**2,243,923**	**6.89**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	0	0.00	0.00%
Trigg Wells	1,933,000	5.93	0.91%
RIAC Wells	12,094,000	37.12	5.67%
Six Mile Hill Wells	90,993,000	279.25	42.68%
South of Roswell Wells	105,927,000	325.08	49.69%
Park's Wells	2,243,923	6.89	1.05%
Combined Totals	**213,190,923**	**654.26**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	213,190,923	654.26
Park's Wells	2,243,923	6.89
Park's Meters	6,631,171	20.35
Golf Course Meters	473,409	1.45
Cemetery Meters	1,664,000	5.11
Water for Sale	**202,178,420**	**620.46**

	Gallons Produced
11/01/09 through 01/31/10	715,809,000
11/01/10 through 01/31/11	706,353,000
11/01/11 through 01/31/12	661,333,000
January 2010	223,250,000
January 2011	230,767,000
January 2012	210,947,000

Typical Well Production used for Water Balance

City of Roswell
Monthly Water Production Report
April 01, 2012 through April 30, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	71672	69585	2,087,000	6.40	0	0	N/A
KW2	RA-2084-X2	13591	26	13,565,000	41.63	0	0	N/A
KW3	RA-2084-X3	5481	3198	2,283,000	7.01	0	0	N/A
KW4	RA-2084-X4	45749	14368	31,381,000	96.31	0	0	N/A
KW5	RA-2009-S4	2350317	2316961	33,356,000	102.37	0	0	N/A
KW6	RA-2009-S3	2163849	2161915	1,934,000	5.94	145	129	16
Kerr WellsTotal Water Produced				**84,606,000**	**259.65**			
TW1	RA-2823	53650	53614	36,000	0.11	0	0	N/A
TW2	RA-2823S	53791	53097	694,000	2.13	0	0	N/A
Trigg Wells Total Water Produced				**730,000**	**2.24**			
RW1	RA-2009	786753	786577	176,000	0.54	131	117	14
RW3	RA-2025	42940	33730	9,210,000	28.26	121	112	9
RW4	RA-2009S	1993373	1993041	332,000	1.02	0	0	N/A
RW5	RA-2009-S2	1696108	1683619	12,489,000	38.33	132	125	7
RIAC Wells Total Water Produced				**22,207,000**	**68.15**			
SMW10	RA-4253	827765	827586	179,000	0.55	0	0	N/A
SMW11	RA-4255	5995777	5962458	33,319,000	102.25	184	175	9
SMW18	RA-4253S	530231	487952	42,279,000	129.75	0	0	N/A
Six Mile Hill Wells Total Water Produced				**75,777,000**	**232.55**			
SRW12	RA-681	2892123	2886839	5,284,000	16.22	0	0	N/A
SRW13	RA-1823	6309458	6288902	20,556,000	63.08	0	0	N/A
SRW15	RA-977C	782514	749704	32,810,000	100.69	112	105	7
SRW16	RA-98S2	343629	295910	47,719,000	146.44	0	0	N/A
SRW17	RA-98S3	9971261	9874348	96,913,000	297.42	0	0	N/A
South of Roswell Wells Total Water Produced				**203,282,000**	**623.85**			
Water System Wells Total Water Produced				**386,602,000**	**1,186.44**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2189291	2172660	16,631,000	51.04			
Dow	RA-339B	1298168	1287614	343,902	1.06			
Joyce	RA-1127	29091	23714	175,210	0.54			
Parks Wells Total Water Produced				**17,150,112**	**52.63**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	84,606,000	259.65	20.95%
Trigg Wells	730,000	2.24	0.18%
RIAC Wells	22,207,000	68.15	5.50%
Six Mile Hill Wells	75,777,000	232.55	18.77%
South of Roswell Wells	203,282,000	623.85	50.35%
Park's Wells	17,150,112	52.63	4.25%
Combined Totals	**403,752,112**	**1,239.07**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	403,752,112	1,239.07
Park's Wells	17,150,112	52.63
Park's Meters	20,922,680	64.21
Golf Course Meters	1,183,560	3.63
Cemetery Meters	7,172,000	22.01
Water for Sale	**357,323,760**	**1,096.59**

	Gallons Produced
11/01/09 through 04/30/10	1,528,594,000
11/01/10 through 04/30/11	1,752,471,000
11/01/11 through 04/30/12	1,589,734,000
April 2010	351,835,000
April 2011	459,181,000
April 2012	386,602,000

City of Roswell
Monthly Water Production Report
March 01, 2012 through March 31, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	69585	61755	7,830,000	24.03	0	0	N/A
KW2	RA-2084-X2	26	26	0	0.00	0	0	N/A
KW3	RA-2084-X3	3198	24	3,174,000	9.74	0	0	N/A
KW4	RA-2084-X4	14368	64	14,304,000	43.90	169	148	21
KW5	RA-2009-S4	2316961	2300514	16,447,000	50.47	152	144	8
KW6	RA-2009-S3	2161915	2161866	49,000	0.15	139	128	11
Kerr WellsTotal Water Produced				**41,804,000**	**128.29**			
TW1	RA-2823	53614	51211	2,403,000	7.37	0	0	N/A
TW2	RA-2823S	53097	51911	1,186,000	3.64	0	0	N/A
Trigg Wells Total Water Produced				**3,589,000**	**11.01**			
RW1	RA-2009	786577	786417	160,000	0.49	1321	113	1208
RW3	RA-2025	33730	16797	16,933,000	51.97	123	111	12
RW4	RA-2009S	1993041	1992850	191,000	0.59	0	0	N/A
RW5	RA-2009-S2	1683619	1679953	3,666,000	11.25	130	121	9
RIAC Wells Total Water Produced				**20,950,000**	**64.29**			
SMW10	RA-4253	827586	827202	384,000	1.18	0	0	N/A
SMW11	RA-4255	5962458	5922719	39,739,000	121.95	181	175	6
SMW18	RA-4253S	487952	436301	51,651,000	158.51	0	0	N/A
Six Mile Hill Wells Total Water Produced				**91,774,000**	**281.64**			
SRW12	RA-681	2886839	2886817	22,000	0.07	0	0	N/A
SRW13	RA-1823	6288902	6279553	9,349,000	28.69	0	0	N/A
SRW15	RA-977C	749704	709317	40,387,000	123.94	103	98	5
SRW16	RA-98S2	295910	249613	46,297,000	142.08	0	0	N/A
SRW17	RA-98S3	9874348	9757727	116,621,000	357.90	0	0	N/A
South of Roswell Wells Total Water Produced				**212,676,000**	**652.68**			
Water System Wells Total Water Produced				**370,793,000**	**1,137.93**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2172660	2164762	7,898,000	24.24			
Dow	RA-339B	1287614	1278216	306,234	0.94			
Joyce	RA-1127	23714	19103	150,249	0.46			
Parks Wells Total Water Produced				**8,354,483**	**25.64**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	41,804,000	128.29	11.03%
Trigg Wells	3,589,000	11.01	0.95%
RIAC Wells	20,950,000	64.29	5.53%
Six Mile Hill Wells	91,774,000	281.64	24.21%
South of Roswell Wells	212,676,000	652.68	56.09%
Park's Wells	8,354,483	25.64	2.20%
Combined Totals	**379,147,483**	**1,163.56**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	379,147,483	1,163.56
Park's Wells	8,354,483	25.64
Park's Meters	10,252,388	31.46
Golf Course Meters	823,847	2.53
Cemetery Meters	2,227,000	6.83
Water for Sale	**357,489,765**	**1,097.10**

	Gallons Produced
11/01/09 through 03/31/10	1,176,759,000
11/01/10 through 03/31/11	1,293,290,000
11/01/11 through 03/31/12	1,203,132,000
March 2010	272,732,000
March 2011	360,756,000
March 2012	370,793,000

City of Roswell
Monthly Water Production Report
June 01, 2012 through June 30, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	82283	74182	8,101,000	24.86	0	0	N/A
KW2	RA-2084-X2	71019	24658	46,361,000	142.28	182	172	10
KW3	RA-2084-X3	34738	14044	20,694,000	63.51	0	0	N/A
KW4	RA-2084-X4	122921	62376	60,545,000	185.81	177	158	19
KW5	RA-2009-S4	46044	44	46,000,000	141.17	160	155	5
KW6	RA-2009-S3	2165500	2164368	1,132,000	3.47	149	137	12
Kerr WellsTotal Water Produced				**182,833,000**	**561.10**			
TW1	RA-2823	53669	53660	9,000	0.03	0	0	N/A
TW2	RA-2823S	53799	53796	3,000	0.01	0	0	N/A
Trigg Wells Total Water Produced				**12,000**	**0.04**			
RW1	RA-2009	786794	786753	41,000	0.13	143	125	18
RW3	RA-2025	74523	44254	30,269,000	92.89	135	125	10
RW4	RA-2009S	2012308	2005998	6,310,000	19.36	0	0	N/A
RW5	RA-2009-S2	1707422	1705925	1,497,000	4.59	140	134	6
RIAC Wells Total Water Produced				**38,117,000**	**116.98**			
SMW10	RA-4253	842056	827843	14,213,000	43.62	0	0	N/A
SMW11	RA-4255	6130724	6052830	77,894,000	239.05	186	178	8
SMW18	RA-4253S	618829	576488	42,341,000	129.94	0	0	N/A
Six Mile Hill Wells Total Water Produced				**134,448,000**	**412.61**			
SRW12	RA-681	2906828	2902803	4,025,000	12.35	0	0	N/A
SRW13	RA-1823	6369692	6346826	22,866,000	70.17	0	0	N/A
SRW15	RA-977C	867058	824352	42,706,000	131.06	118	113	5
SRW16	RA-98S2	466508	410327	56,181,000	172.41	0	0	N/A
SRW17	RA-98S3	10183389	10081811	101,578,000	311.73	0	0	N/A
South of Roswell Wells Total Water Produced				**227,356,000**	**697.73**			
Water System Wells Total Water Produced				**582,766,000**	**1,788.45**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2232304	2208080	24,224,000	74.34			
Dow	RA-339B	1354729	1328643	850,012	2.61			
Joyce	RA-1127	41493	33470	261,429	0.80			
Parks Wells Total Water Produced				**25,335,442**	**77.75**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	182,833,000	561.10	30.07%
Trigg Wells	12,000	0.04	0.00%
RIAC Wells	38,117,000	116.98	6.27%
Six Mile Hill Wells	134,448,000	412.61	22.11%
South of Roswell Wells	227,356,000	697.73	37.39%
Park's Wells	25,335,442	77.75	4.17%
Combined Totals	**608,101,442**	**1,866.20**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	608,101,442	1,866.20
Park's Wells	25,335,442	77.75
Park's Meters	42,683,273	130.99
Golf Course Meters	3,055,206	9.38
Cemetery Meters	8,530,000	26.18
Water for Sale	**528,497,521**	**1,621.90**

	Gallons Produced
11/01/09 through 06/30/10	2,483,167,000
11/01/10 through 06/30/11	2,888,887,000
11/01/11 through 06/30/12	2,606,089,000
June 2010	472,066,000
June 2011	581,396,000
June 2012	582,766,000

City of Roswell
Monthly Water Production Report
May 01, 2012 through May 31, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	74182	71672	2,510,000	7.70	0	0	N/A
KW2	RA-2084-X2	24658	13591	11,067,000	33.96	175	161	14
KW3	RA-2084-X3	14044	5481	8,563,000	26.28	0	0	N/A
KW4	RA-2084-X4	62376	45749	16,627,000	51.03	171	150	21
KW5	RA-2009-S4	44	34	10,000	0.03	156	148	8
KW6	RA-2009-S3	2164368	2163849	519,000	1.59	176	164	12
Kerr WellsTotal Water Produced				**39,296,000**	**120.60**			
TW1	RA-2823	53660	53650	10,000	0.03	0	0	N/A
TW2	RA-2823S	53796	53791	5,000	0.02	0	0	N/A
Trigg Wells Total Water Produced				**15,000**	**0.05**			
RW1	RA-2009	786753	786753	0	0.00	134	118	16
RW3	RA-2025	44254	42940	1,314,000	4.03	125	116	9
RW4	RA-2009S	2005998	1993373	12,625,000	38.74	0	0	N/A
RW5	RA-2009-S2	1705925	1696108	9,817,000	30.13	131	123	8
RIAC Wells Total Water Produced				**23,756,000**	**72.90**			
SMW10	RA-4253	827843	827765	78,000	0.24	0	0	N/A
SMW11	RA-4255	6052830	5995777	57,053,000	175.09	183	174	N/A
SMW18	RA-4253S	576488	530231	46,257,000	141.96	0	0	N/A
Six Mile Hill Wells Total Water Produced				**103,388,000**	**317.29**			
SRW12	RA-681	2902803	2892123	10,680,000	32.78	0	0	N/A
SRW13	RA-1823	6346826	6309458	37,368,000	114.68	0	0	N/A
SRW15	RA-977C	824352	782514	41,838,000	128.40	113	107	6
SRW16	RA-98S2	410327	343629	66,698,000	204.69	0	0	N/A
SRW17	RA-98S3	10081811	9971261	110,550,000	339.27	0	0	N/A
South of Roswell Wells Total Water Produced				**267,134,000**	**819.81**			
Water System Wells Total Water Produced				**433,589,000**	**1,330.64**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2208080	2189291	18,789,000	57.66			
Dow	RA-339B	1328643	1298168	993,028	3.05			
Joyce	RA-1127	33470	29091	142,690	0.44			
Parks Wells Total Water Produced				**19,924,718**	**61.15**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	39,296,000	120.60	8.66%
Trigg Wells	15,000	0.05	0.00%
RIAC Wells	23,756,000	72.90	5.24%
Six Mile Hill Wells	103,388,000	317.29	22.80%
South of Roswell Wells	267,134,000	819.81	58.90%
Park's Wells	19,924,718	61.15	4.39%
Combined Totals	**453,513,718**	**1,391.79**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	453,513,718	1,391.79
Park's Wells	19,924,718	61.15
Park's Meters	34,595,974	106.17
Golf Course Meters	2,823,027	8.66
Cemetery Meters	7,345,000	22.54
Water for Sale	**388,824,999**	**1,193.26**

	Gallons Produced
11/01/09 through 05/31/10	2,011,101,000
11/01/10 through 05/31/11	2,307,491,000
11/01/11 through 05/31/12	2,023,323,000
May 2010	482,507,000
May 2011	555,020,000
May 2012	433,589,000

City of Roswell
Monthly Water Production Report
August 01, 2012 through August 31, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	134623	97946	36,677,000	112.56	0	0	N/A
KW2	RA-2084-X2	121998	120123	1,875,000	5.75	184	170	14
KW3	RA-2084-X3	50358	48162	2,196,000	6.74	0	0	N/A
KW4	RA-2084-X4	243282	176468	66,814,000	205.05	181	159	22
KW5	RA-2009-S4	173450	132653	40,797,000	125.20	163	157	6
KW6	RA-2009-S3	2165988	2165627	361,000	1.11	0	0	N/A
Kerr WellsTotal Water Produced				**148,720,000**	**456.41**			
TW1	RA-2823	81062	53678	27,384,000	84.04	0	0	N/A
TW2	RA-2823S	86060	53834	32,226,000	98.90	0	0	N/A
Trigg Wells Total Water Produced				**59,610,000**	**182.94**			
RW1	RA-2009	787482	787120	362,000	1.11	143	124	19
RW3	RA-2025	138819	109101	29,718,000	91.20	134	125	N/A
RW4	RA-2009S	2021012	2016526	4,486,000	13.77	0	0	N/A
RW5	RA-2009-S2	1709247	1708577	670,000	2.06	142	131	11
RIAC Wells Total Water Produced				**35,236,000**	**108.14**			
SMW10	RA-4253	855641	850845	4,796,000	14.72	0	0	N/A
SMW11	RA-4255	6261170	6200953	60,217,000	184.80	186	174	N/A
SMW18	RA-4253S	708803	664791	44,012,000	135.07	0	0	N/A
Six Mile Hill Wells Total Water Produced				**109,025,000**	**334.59**			
SRW12	RA-681	2909381	2908369	1,012,000	3.11	0	0	N/A
SRW13	RA-1823	6399121	6386201	12,920,000	39.65	0	0	N/A
SRW15	RA-977C	924624	899602	25,022,000	76.79	115	109	6
SRW16	RA-98S2	571113	523186	47,927,000	147.08	0	0	N/A
SRW17	RA-98S3	10387901	10288023	99,878,000	306.52	0	0	N/A
South of Roswell Wells Total Water Produced				**186,759,000**	**573.14**			
Water System Wells Total Water Produced				**539,350,000**	**1,655.21**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2270802	2250406	20,396,000	62.59			
Dow	RA-339B	1418137	1396137	716,870	2.20			
Joyce	RA-1127	55895	47367	277,885	0.85			
Parks Wells Total Water Produced				**21,390,755**	**65.65**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	148,720,000	456.41	26.52%
Trigg Wells	59,610,000	182.94	10.63%
RIAC Wells	35,236,000	108.14	6.28%
Six Mile Hill Wells	109,025,000	334.59	19.44%
South of Roswell Wells	186,759,000	573.14	33.31%
Park's Wells	21,390,755	65.65	3.81%
Combined Totals	**560,740,755**	**1,720.86**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	560,740,755	1,720.86
Park's Wells	21,390,755	65.65
Park's Meters	46,893,467	143.91
Golf Course Meters	2,851,525	8.75
Cemetery Meters	9,247,070	28.38
Water for Sale	**480,357,938**	**1,474.17**

	Gallons Produced
11/01/09 through 08/31/10	3,383,821,000
11/01/10 through 08/31/11	4,096,583,000
11/01/11 through 08/31/12	3,741,120,000
August 2010	486,913,000
August 2011	579,812,000
August 2012	539,350,000

City of Roswell
Monthly Water Production Report
July 01, 2012 through July 31, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	97946	82283	15,663,000	48.07	0	0	N/A
KW2	RA-2084-X2	120123	71019	49,104,000	150.70	186	184	N/A
KW3	RA-2084-X3	48162	34738	13,424,000	41.20	0	0	N/A
KW4	RA-2084-X4	176468	122921	53,547,000	164.33	181	162	19
KW5	RA-2009-S4	132653	46044	86,609,000	265.79	169	158	11
KW6	RA-2009-S3	2165627	2165500	127,000	0.39	0	0	N/A
Kerr WellsTotal Water Produced				**218,474,000**	**670.47**			
TW1	RA-2823	53678	53669	9,000	0.03	0	0	N/A
TW2	RA-2823S	53834	53799	35,000	0.11	0	0	N/A
Trigg Wells Total Water Produced				**44,000**	**0.14**			
RW1	RA-2009	787120	786794	326,000	1.00	144	127	17
RW3	RA-2025	109101	74523	34,578,000	106.12	135	127	8
RW4	RA-2009S	2016526	2012308	4,218,000	12.94	0	0	N/A
RW5	RA-2009-S2	1708577	1707422	1,155,000	3.54	138	123	15
RIAC Wells Total Water Produced				**40,277,000**	**123.61**			
SMW10	RA-4253	850845	842056	8,789,000	26.97	0	0	N/A
SMW11	RA-4255	6200953	6130724	70,229,000	215.53	185	176	9
SMW18	RA-4253S	664791	618829	45,962,000	141.05	0	0	N/A
Six Mile Hill Wells Total Water Produced				**124,980,000**	**383.55**			
SRW12	RA-681	2908369	2906828	1,541,000	4.73	0	0	N/A
SRW13	RA-1823	6386201	6369692	16,509,000	50.66	0	0	N/A
SRW15	RA-977C	899602	867058	32,544,000	99.87	116	109	N/A
SRW16	RA-98S2	523186	466508	56,678,000	173.94	0	0	N/A
SRW17	RA-98S3	10288023	10183389	104,634,000	321.11	0	0	N/A
South of Roswell Wells Total Water Produced				**211,906,000**	**650.32**			
Water System Wells Total Water Produced				**595,681,000**	**1,828.08**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2250406	2232304	18,102,000	55.55			
Dow	RA-339B	1396137	1354729	1,349,280	4.14			
Joyce	RA-1127	47367	41493	191,404	0.59			
Parks Wells Total Water Produced				**19,642,684**	**60.28**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	218,474,000	670.47	35.51%
Trigg Wells	44,000	0.14	0.01%
RIAC Wells	40,277,000	123.61	6.55%
Six Mile Hill Wells	124,980,000	383.55	20.31%
South of Roswell Wells	211,906,000	650.32	34.44%
Park's Wells	19,642,684	60.28	3.19%
Combined Totals	**615,323,684**	**1,888.36**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	615,323,684	1,888.36
Park's Wells	19,642,684	60.28
Park's Meters	52,084,437	159.84
Golf Course Meters	4,489,945	13.78
Cemetery Meters	8,888,480	27.28
Water for Sale	**530,218,138**	**1,627.18**

	Gallons Produced
11/01/09 through 07/31/10	2,896,908,000
11/01/10 through 07/31/11	3,516,771,000
11/01/11 through 07/31/12	3,201,770,000
July 2010	413,741,000
July 2011	627,884,000
July 2012	595,681,000

City of Roswell
Monthly Water Production Report
October 01, 2012 through October 31, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	157015	155540	1,475,000	4.53	0	0	N/A
KW2	RA-2084-X2	136346	136307	39,000	0.12	182	171	N/A
KW3	RA-2084-X3	58727	58676	51,000	0.16	0	0	N/A
KW4	RA-2084-X4	277415	274308	3,107,000	9.54	173	153	20
KW5	RA-2009-S4	204638	204155	483,000	1.48	158	151	7
KW6	RA-2009-S3	1738	44	1,694,000	5.20	145	134	11
Kerr Wells Total Water Produced				**6,849,000**	**21.02**			
TW1	RA-2823	91749	91474	275,000	0.84	0	0	N/A
TW2	RA-2823S	93163	92840	323,000	0.99	0	0	N/A
Trigg Wells Total Water Produced				**598,000**	**1.84**			
RW1	RA-2009	787769	787769	0	0.00	0	0	N/A
RW3	RA-2025	184161	163453	20,708,000	63.55	125	114	N/A
RW4	RA-2009S	2024111	2023252	859,000	2.64	0	0	N/A
RW5	RA-2009-S2	1710755	1710183	572,000	1.76	138	129	9
RIAC Wells Total Water Produced				**22,139,000**	**67.94**			
SMW10	RA-4253	865007	860509	4,498,000	13.80	0	0	N/A
SMW11	RA-4255	6383448	6313507	69,941,000	214.64	188	178	10
SMW18	RA-4253S	796092	748661	47,431,000	145.56	0	0	N/A
Six Mile Hill Wells Total Water Produced				**121,870,000**	**374.01**			
SRW12	RA-681	2910806	2910148	658,000	2.02	0	0	N/A
SRW13	RA-1823	6419713	6409755	9,958,000	30.56	0	0	N/A
SRW15	RA-977C	971886	945167	26,719,000	82.00	110	105	5
SRW16	RA-98S2	659531	609125	50,406,000	154.69	0	0	N/A
SRW17	RA-98S3	10591057	10478772	112,285,000	344.59	0	0	N/A
South of Roswell Wells Total Water Produced				**200,026,000**	**613.86**			
Water System Wells Total Water Produced				**351,482,000**	**1,078.66**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2291748	2285250	6,498,000	19.94			
Dow	RA-339B	1418137	1418137	0	0.00			
Joyce	RA-1127	66107	61547	148,588	0.46			
Parks Wells Total Water Produced				**6,646,588**	**20.40**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	6,849,000	21.02	1.91%
Trigg Wells	598,000	1.84	0.17%
RIAC Wells	22,139,000	67.94	6.18%
Six Mile Hill Wells	121,870,000	374.01	34.03%
South of Roswell Wells	200,026,000	613.86	55.85%
Park's Wells	6,646,588	20.40	1.86%
Combined Totals	**358,128,588**	**1,099.06**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	358,128,588	1,099.06
Park's Wells	6,646,588	20.40
Park's Meters	22,915,729	70.33
Golf Course Meters	1,512,830	4.64
Cemetery Meters	3,092,500	9.49
Water for Sale	**323,960,941**	**994.20**

	Gallons Produced
11/01/09 through 10/31/10	4,131,866,000
11/01/10 through 10/31/11	4,913,262,000
11/01/11 through 10/31/12	4,501,075,000
October 2010	357,852,000
October 2011	361,453,000
October 2012	351,482,000

City of Roswell
Monthly Water Production Report
September 01, 2012 through September 30, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	155540	134623	20,917,000	64.19	0	0	N/A
KW2	RA-2084-X2	136307	121998	14,309,000	43.91	182	170	12
KW3	RA-2084-X3	58676	50358	8,318,000	25.53	0	0	N/A
KW4	RA-2084-X4	274308	243282	31,026,000	95.22	178	155	23
KW5	RA-2009-S4	204155	173450	30,705,000	94.23	161	155	6
KW6	RA-2009-S3	44	25	19,000	0.06	150	140	10
Kerr Wells Total Water Produced				**105,294,000**	**323.14**			
TW1	RA-2823	91474	81062	10,412,000	31.95	0	0	N/A
TW2	RA-2823S	92840	86060	6,780,000	20.81	0	0	N/A
Trigg Wells Total Water Produced				**17,192,000**	**52.76**			
RW1	RA-2009	787769	787482	287,000	0.88	136	118	18
RW3	RA-2025	163453	138819	24,634,000	75.60	130	116	N/A
RW4	RA-2009S	2023252	2021012	2,240,000	6.87	0	0	N/A
RW5	RA-2009-S2	1710183	1709247	936,000	2.87	140	130	10
RIAC Wells Total Water Produced				**28,097,000**	**86.23**			
SMW10	RA-4253	860509	855641	4,868,000	14.94	0	0	N/A
SMW11	RA-4255	6313507	6261170	52,337,000	160.62	187	176	11
SMW18	RA-4253S	748661	708803	39,858,000	122.32	0	0	N/A
Six Mile Hill Wells Total Water Produced				**97,063,000**	**297.88**			
SRW12	RA-681	2910148	2909381	767,000	2.35	0	0	N/A
SRW13	RA-1823	6409755	6399121	10,634,000	32.63	0	0	N/A
SRW15	RA-977C	945167	924624	20,543,000	63.04	110	103	7
SRW16	RA-98S2	609125	571113	38,012,000	116.65	0	0	N/A
SRW17	RA-98S3	10478772	10387901	90,871,000	278.87	0	0	N/A
South of Roswell Wells Total Water Produced				**160,827,000**	**493.56**			
Water System Wells Total Water Produced				**408,473,000**	**1,253.56**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2285250	2270802	14,448,000	44.34			
Dow	RA-339B	1418137	1418137	0	0.00			
Joyce	RA-1127	61547	55895	184,170	0.57			
Parks Wells Total Water Produced				**14,632,170**	**44.90**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	105,294,000	323.14	24.89%
Trigg Wells	17,192,000	52.76	4.06%
RIAC Wells	28,097,000	86.23	6.64%
Six Mile Hill Wells	97,063,000	297.88	22.94%
South of Roswell Wells	160,827,000	493.56	38.01%
Park's Wells	14,632,170	44.90	3.46%
Combined Totals	**423,105,170**	**1,298.47**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	423,105,170	1,298.47
Park's Wells	14,632,170	44.90
Park's Meters	34,306,572	105.28
Golf Course Meters	2,181,916	6.70
Cemetery Meters	8,646,920	26.54
Water for Sale	**363,337,592**	**1,115.05**

	Gallons Produced
11/01/09 through 09/30/10	3,774,014,000
11/01/10 through 09/30/11	4,551,809,000
11/01/11 through 09/30/12	4,149,593,000
September 2010	390,193,000
September 2011	455,226,000
September 2012	408,473,000

City of Roswell
Monthly Water Production Report
December 01, 2012 through December 31, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	157685	157676	9,000	0.03	0	0	N/A
KW2	RA-2084-X2	136384	136375	9,000	0.03	191	171	20
KW3	RA-2084-X3	58764	58745	19,000	0.06	0	0	N/A
KW4	RA-2084-X4	280281	279106	1,175,000	3.61	177	155	22
KW5	RA-2009-S4	204732	204704	28,000	0.09	161	154	7
KW6	RA-2009-S3	2115	2088	27,000	0.08	148	131	17
Kerr WellsTotal Water Produced				**1,267,000**	**3.89**			
TW1	RA-2823	92504	92318	186,000	0.57	0	0	N/A
TW2	RA-2823S	93985	93747	238,000	0.73	0	0	N/A
Trigg Wells Total Water Produced				**424,000**	**1.30**			
RW1	RA-2009	0	0	0	0.00	0	0	N/A
RW3	RA-2025	210398	198907	11,491,000	35.26	116	104	12
RW4	RA-2009S	2024456	2024348	108,000	0.33	0	0	N/A
RW5	RA-2009-S2	1711019	1710931	88,000	0.27	130	119	11
RIAC Wells Total Water Produced				**11,687,000**	**35.87**			
SMW10	RA-4253	866470	866227	243,000	0.75	0	0	N/A
SMW11	RA-4255	6460446	6444164	16,282,000	49.97	0	0	N/A
SMW18	RA-4253S	881748	839456	42,292,000	129.79	0	0	N/A
Six Mile Hill Wells Total Water Produced				**58,817,000**	**180.50**			
SRW12	RA-681	2911191	2911156	35,000	0.11	0	0	N/A
SRW13	RA-1823	6426328	6423001	3,327,000	10.21	0	0	N/A
SRW15	RA-977C	977930	974272	3,658,000	11.23	110	102	8
SRW16	RA-98S2	704851	680006	24,845,000	76.25	0	0	N/A
SRW17	RA-98S3	10791278	10694301	96,977,000	297.61	0	0	N/A
South of Roswell Wells Total Water Produced				**128,842,000**	**395.40**			
Water System Wells Total Water Produced				**201,037,000**	**616.96**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2298404	2296784	1,620,000	4.97			
Dow	RA-339B	1419584	1419055	17,237	0.05			
Joyce	RA-1127	72325	69071	106,032	0.33			
Parks Wells Total Water Produced				**1,743,269**	**5.35**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	1,267,000	3.89	0.62%
Trigg Wells	424,000	1.30	0.21%
RIAC Wells	11,687,000	35.87	5.76%
Six Mile Hill Wells	58,817,000	180.50	29.01%
South of Roswell Wells	128,842,000	395.40	63.54%
Park's Wells	1,743,269	5.35	0.86%
Combined Totals	**202,780,269**	**622.31**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	202,780,269	622.31
Park's Wells	1,743,269	5.35
Park's Meters	5,842,180	17.93
Golf Course Meters	748,599	2.30
Cemetery Meters	827,360	2.54
Water for Sale	**193,618,861**	**594.20**

	Gallons Produced
11/01/10 through 12/31/10	475,586,000
11/01/11 through 12/31/11	450,386,000
11/01/12 through 12/31/12	455,207,000
December 2010	218,430,000
December 2011	194,624,000
December 2012	201,037,000

City of Roswell
Monthly Water Production Report
November 01, 2012 through November 30, 2012

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	157676	157015	661,000	2.03	0	0	N/A
KW2	RA-2084-X2	136375	136346	29,000	0.09	0	0	N/A
KW3	RA-2084-X3	58745	58727	18,000	0.06	0	0	N/A
KW4	RA-2084-X4	279106	277415	1,691,000	5.19	0	0	N/A
KW5	RA-2009-S4	204704	204638	66,000	0.20	0	0	N/A
KW6	RA-2009-S3	2088	1738	350,000	1.07	0	0	N/A
Kerr WellsTotal Water Produced				**2,815,000**	**8.64**			
TW1	RA-2823	92318	91749	569,000	1.75	0	0	N/A
TW2	RA-2823S	93747	93163	584,000	1.79	0	0	N/A
Trigg Wells Total Water Produced				**1,153,000**	**3.54**			
RW1	RA-2009	0	0	0	0.00	0	0	N/A
RW3	RA-2025	198907	184161	14,746,000	45.25	127	118	9
RW4	RA-2009S	2024348	2024111	237,000	0.73	0	0	N/A
RW5	RA-2009-S2	1710931	1710755	176,000	0.54	136	124	12
RIAC Wells Total Water Produced				**15,159,000**	**46.52**			
SMW10	RA-4253	866227	865007	1,220,000	3.74	0	0	N/A
SMW11	RA-4255	6444164	6383448	60,716,000	186.33	183	174	9
SMW18	RA-4253S	839456	796092	43,364,000	133.08	0	0	N/A
Six Mile Hill Wells Total Water Produced				**105,300,000**	**323.15**			
SRW12	RA-681	2911156	2910806	350,000	1.07	0	0	N/A
SRW13	RA-1823	6423001	6419713	3,288,000	10.09	0	0	N/A
SRW15	RA-977C	974272	971886	2,386,000	7.32	0	0	N/A
SRW16	RA-98S2	680006	659531	20,475,000	62.84	0	0	N/A
SRW17	RA-98S3	10694301	10591057	103,244,000	316.85	0	0	N/A
South of Roswell Wells Total Water Produced				**129,743,000**	**398.17**			
Water System Wells Total Water Produced				**254,170,000**	**780.02**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2296784	2291748	5,036,000	15.45			
Dow	RA-339B	1419055	1418137	29,913	0.09			
Joyce	RA-1127	69071	66107	96,582	0.30			
Parks Wells Total Water Produced				**5,162,495**	**15.84**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	2,815,000	8.64	1.09%
Trigg Wells	1,153,000	3.54	0.44%
RIAC Wells	15,159,000	46.52	5.85%
Six Mile Hill Wells	105,300,000	323.15	40.60%
South of Roswell Wells	129,743,000	398.17	50.03%
Park's Wells	5,162,495	15.84	1.99%
Combined Totals	**259,332,495**	**795.86**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	259,332,495	795.86
Park's Wells	5,162,495	15.84
Park's Meters	16,435,281	50.44
Golf Course Meters	1,527,117	4.69
Cemetery Meters	2,912,990	8.94
Water for Sale	**233,294,612**	**715.96**

	Gallons Produced
11/01/10 through 11/30/10	257,156,000
11/01/11 through 11/30/11	255,762,000
11/01/12 through 11/30/12	254,170,000
November 2010	257,156,000
November 2011	255,762,000
November 2012	254,170,000

City of Roswell
Monthly Water Production Report
February 01, 2013 through February 28, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	159028	158949	79,000	0.24	0	0	N/A
KW2	RA-2084-X2	136470	136431	39,000	0.12	192	171	21
KW3	RA-2084-X3	58834	58811	23,000	0.07	0	0	N/A
KW4	RA-2084-X4	286104	284419	1,685,000	5.17	175	156	19
KW5	RA-2009-S4	204812	204760	52,000	0.16	161	153	8
KW6	RA-2009-S3	2207	2182	25,000	0.08	148	132	16
Kerr WellsTotal Water Produced				**1,903,000**	**5.84**			
TW1	RA-2823	95089	94897	192,000	0.59	0	0	N/A
TW2	RA-2823S	96858	96617	241,000	0.74	0	0	N/A
Trigg Wells Total Water Produced				**433,000**	**1.33**			
RW1	RA-2009	328	211	117,000	0.36	123	106	17
RW3	RA-2025	232851	221264	11,587,000	35.56	118	112	6
RW4	RA-2009S	2024889	2024844	45,000	0.14	0	0	N/A
RW5	RA-2009-S2	1711169	1711120	49,000	0.15	131	118	13
RIAC Wells Total Water Produced				**11,798,000**	**36.21**			
SMW10	RA-4253	868294	866701	1,593,000	4.89	0	0	N/A
SMW11	RA-4255	6530458	6465657	64,801,000	198.87	181	174	7
SMW18	RA-4253S	943372	925604	17,768,000	54.53	0	0	N/A
Six Mile Hill Wells Total Water Produced				**84,162,000**	**258.28**			
SRW12	RA-681	2912529	2912490	39,000	0.12	0	0	N/A
SRW13	RA-1823	6442255	6430240	12,015,000	36.87	0	0	N/A
SRW15	RA-977C	0	0	0	0.00	0	0	N/A
SRW16	RA-98S2	790857	739565	51,292,000	157.41	0	0	N/A
SRW17	RA-98S3	10944311	10895207	49,104,000	150.70	0	0	N/A
South of Roswell Wells Total Water Produced				**112,450,000**	**345.10**			
Water System Wells Total Water Produced				**210,746,000**	**646.76**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2300681	2299505	1,176,000	3.61			
Dow	RA-339B	1419735	1419584	4,920	0.02			
Joyce	RA-1127	78041	75028	98,179	0.30			
Parks Wells Total Water Produced				**1,279,099**	**3.93**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	1,903,000	5.84	0.90%
Trigg Wells	433,000	1.33	0.20%
RIAC Wells	11,798,000	36.21	5.56%
Six Mile Hill Wells	84,162,000	258.28	39.69%
South of Roswell Wells	112,450,000	345.10	53.04%
Park's Wells	1,279,099	3.93	0.60%
Combined Totals	**212,025,099**	**650.68**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	212,025,099	650.68
Park's Wells	1,279,099	3.93
Park's Meters	2,175,483	6.68
Golf Course Meters	4,750,548	14.58
Cemetery Meters	1,010,180	3.10
Water for Sale	**202,809,789**	**622.40**

	Gallons Produced
11/01/10 through 02/28/11	932,534,000
11/01/11 through 02/28/12	832,339,000
11/01/12 through 02/28/13	881,382,000
February 2011	226,181,000
February 2012	171,006,000
February 2013	210,746,000

City of Roswell
Monthly Water Production Report
January 01, 2013 through January 31, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	158949	157685	1,264,000	3.88	0	0	N/A
KW2	RA-2084-X2	136431	136384	47,000	0.14	190	173	17
KW3	RA-2084-X3	58811	58764	47,000	0.14	0	0	N/A
KW4	RA-2084-X4	284419	280281	4,138,000	12.70	175	155	20
KW5	RA-2009-S4	204760	204732	28,000	0.09	161	152	9
KW6	RA-2009-S3	2182	2115	67,000	0.21	147	131	16
Kerr WellsTotal Water Produced				**5,591,000**	**17.16**			
TW1	RA-2823	94897	92504	2,393,000	7.34	0	0	N/A
TW2	RA-2823S	96617	93985	2,632,000	8.08	0	0	N/A
Trigg Wells Total Water Produced				**5,025,000**	**15.42**			
RW1	RA-2009	211	0	211,000	0.65	122	107	15
RW3	RA-2025	221264	210398	10,866,000	33.35	115	111	4
RW4	RA-2009S	2024844	2024456	388,000	1.19	0	0	N/A
RW5	RA-2009-S2	1711120	1711019	101,000	0.31	132	118	14
RIAC Wells Total Water Produced				**11,566,000**	**35.49**			
SMW10	RA-4253	866701	866470	231,000	0.71	0	0	N/A
SMW11	RA-4255	6465657	6460446	5,211,000	15.99	184	171	13
SMW18	RA-4253S	925604	881748	43,856,000	134.59	0	0	N/A
Six Mile Hill Wells Total Water Produced				**49,298,000**	**151.29**			
SRW12	RA-681	2912490	2911191	1,299,000	3.99	0	0	N/A
SRW13	RA-1823	6430240	6426328	3,912,000	12.01	0	0	N/A
SRW15	RA-977C	978025	977930	95,000	0.29	0	0	N/A
SRW16	RA-98S2	739565	704851	34,714,000	106.53	0	0	N/A
SRW17	RA-98S3	10895207	10791278	103,929,000	318.95	0	0	N/A
South of Roswell Wells Total Water Produced				**143,949,000**	**441.76**			
Water System Wells Total Water Produced				**215,429,000**	**661.13**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2299505	2298404	1,101,000	3.38			
Dow	RA-339B	1419584	1419584	0	0.00			
Joyce	RA-1127	75028	72325	88,077	0.27			
Parks Wells Total Water Produced				**1,189,077**	**3.65**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	5,591,000	17.16	2.58%
Trigg Wells	5,025,000	15.42	2.32%
RIAC Wells	11,566,000	35.49	5.34%
Six Mile Hill Wells	49,298,000	151.29	22.76%
South of Roswell Wells	143,949,000	441.76	66.45%
Park's Wells	1,189,077	3.65	0.55%
Combined Totals	**216,618,077**	**664.78**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	216,618,077	664.78
Park's Wells	1,189,077	3.65
Park's Meters	2,248,489	6.90
Golf Course Meters	1,995,889	6.13
Cemetery Meters	710,710	2.18
Water for Sale	**210,473,912**	**645.92**

	Gallons Produced
11/01/10 through 01/31/11	706,353,000
11/01/11 through 01/31/12	661,333,000
11/01/12 through 01/31/13	670,636,000
January 2011	230,767,000
January 2012	210,947,000
January 2013	215,429,000

City of Roswell
Monthly Water Production Report
April 01, 2013 through April 30, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	168501	162852	5,649,000	17.34	0	0	N/A
KW2	RA-2084-X2	136653	136489	164,000	0.50	189	168	21
KW3	RA-2084-X3	59489	58849	640,000	1.96	0	0	N/A
KW4	RA-2084-X4	303985	294630	9,355,000	28.71	170	151	19
KW5	RA-2009-S4	204958	204844	114,000	0.35	155	151	4
KW6	RA-2009-S3	2952	2850	102,000	0.31	143	132	11
Kerr WellsTotal Water Produced				**16,024,000**	**49.18**			
TW1	RA-2823	106299	100771	5,528,000	16.96	0	0	N/A
TW2	RA-2823S	108821	102906	5,915,000	18.15	0	0	N/A
Trigg Wells Total Water Produced				**11,443,000**	**35.12**			
RW1	RA-2009	582	392	190,000	0.58	131	114	17
RW3	RA-2025	273663	250621	23,042,000	70.71	121	110	11
RW4	RA-2009S	2025824	2025078	746,000	2.29	0	0	N/A
RW5	RA-2009-S2	1711893	1711282	611,000	1.88	138	121	17
RIAC Wells Total Water Produced				**24,589,000**	**75.46**			
SMW10	RA-4253	951077	904118	46,959,000	144.11	0	0	N/A
SMW11	RA-4255	6670598	6603361	67,237,000	206.34	183	175	8
SMW18	RA-4253S	1032818	990197	42,621,000	130.80	0	0	N/A
Six Mile Hill Wells Total Water Produced				**156,817,000**	**481.26**			
SRW12	RA-681	2936204	2921701	14,503,000	44.51	0	0	N/A
SRW13	RA-1823	6561808	6502051	59,757,000	183.39	0	0	N/A
SRW15	RA-977C	57725	0	57,725,000	177.15	105	98	7
SRW16	RA-98S2	939253	868431	70,822,000	217.35	0	0	N/A
SRW17	RA-98S3	4940	33	4,907,000	15.06	0	0	N/A
South of Roswell Wells Total Water Produced				**207,714,000**	**637.45**			
Water System Wells Total Water Produced				**416,587,000**	**1,278.46**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2322581	2308200	14,381,000	44.13			
Dow	RA-339B	1452812	1438047	481,118	1.48			
Joyce	RA-1127	88097	82459	183,714	0.56			
Parks Wells Total Water Produced				**15,045,832**	**46.17**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	16,024,000	49.18	3.71%
Trigg Wells	11,443,000	35.12	2.65%
RIAC Wells	24,589,000	75.46	5.70%
Six Mile Hill Wells	156,817,000	481.26	36.33%
South of Roswell Wells	207,714,000	637.45	48.12%
Park's Wells	15,045,832	46.17	3.49%
Combined Totals	**431,632,832**	**1,324.64**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	431,632,832	1,324.64
Park's Wells	15,045,832	46.17
Park's Meters	26,494,681	81.31
Golf Course Meters	3,075,402	9.44
Cemetery Meters	3,712,010	11.39
Water for Sale	**383,304,907**	**1,176.32**

	Gallons Produced
11/01/10 through 04/30/11	1,752,471,000
11/01/11 through 04/30/12	1,589,734,000
11/01/12 through 04/30/13	1,642,988,000
April 2011	459,181,000
April 2012	386,602,000
April 2013	416,587,000

City of Roswell
Monthly Water Production Report
March 01, 2013 through March 31, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	162852	159028	3,824,000	11.74	0	0	N/A
KW2	RA-2084-X2	136489	136470	19,000	0.06	192	172	20
KW3	RA-2084-X3	58849	58834	15,000	0.05	0	0	N/A
KW4	RA-2084-X4	294630	286104	8,526,000	26.17	175	155	20
KW5	RA-2009-S4	204844	204812	32,000	0.10	160	151	9
KW6	RA-2009-S3	2850	2207	643,000	1.97	148	131	17
Kerr WellsTotal Water Produced				**13,059,000**	**40.08**			
TW1	RA-2823	100771	95089	5,682,000	17.44	0	0	N/A
TW2	RA-2823S	102906	96858	6,048,000	18.56	0	0	N/A
Trigg Wells Total Water Produced				**11,730,000**	**36.00**			
RW1	RA-2009	392	328	64,000	0.20	130	113	17
RW3	RA-2025	250621	232851	17,770,000	54.53	121	111	10
RW4	RA-2009S	2025078	2024889	189,000	0.58	0	0	N/A
RW5	RA-2009-S2	1711282	1711169	113,000	0.35	132	118	14
RIAC Wells Total Water Produced				**18,136,000**	**55.66**			
SMW10	RA-4253	904118	868294	35,824,000	109.94	0	0	N/A
SMW11	RA-4255	6603361	6530458	72,903,000	223.73	184	175	9
SMW18	RA-4253S	990197	943372	46,825,000	143.70	0	0	N/A
Six Mile Hill Wells Total Water Produced				**155,552,000**	**477.37**			
SRW12	RA-681	2921701	2912529	9,172,000	28.15	0	0	N/A
SRW13	RA-1823	6502051	6442255	59,796,000	183.51	0	0	N/A
SRW15	RA-977C	0	0	0	0.00	0	0	N/A
SRW16	RA-98S2	868431	790857	77,574,000	238.07	0	0	N/A
SRW17	RA-98S3	10944311	10944311	0	0.00	0	0	N/A
South of Roswell Wells Total Water Produced				**146,542,000**	**449.72**			
Water System Wells Total Water Produced				**345,019,000**	**1,058.83**			
SRW4	RA-98S	27286	27286	0	0.00			
SRW8	RA-2167	2308200	2300681	7,519,000	23.08			
Dow	RA-339B	1438047	1419735	596,697	1.83			
Joyce	RA-1127	82459	78041	143,961	0.44			
Parks Wells Total Water Produced				**8,259,657**	**25.35**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	13,059,000	40.08	3.70%
Trigg Wells	11,730,000	36.00	3.32%
RIAC Wells	18,136,000	55.66	5.13%
Six Mile Hill Wells	155,552,000	477.37	44.03%
South of Roswell Wells	146,542,000	449.72	41.48%
Park's Wells	8,259,657	25.35	2.34%
Combined Totals	**353,278,657**	**1,084.18**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	353,278,657	1,084.18
Park's Wells	8,259,657	25.35
Park's Meters	8,638,577	26.51
Golf Course Meters	4,116,020	12.63
Cemetery Meters	1,986,240	6.10
Water for Sale	**330,278,163**	**1,013.59**

	Gallons Produced
11/01/10 through 03/31/11	1,293,290,000
11/01/11 through 03/31/12	1,203,132,000
11/01/12 through 03/31/13	1,226,401,000
March 2011	360,756,000
March 2012	370,793,000
March 2013	345,019,000

City of Roswell
Monthly Water Production Report
June 01, 2013 through June 30, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	183347	169717	13,630,000	41.83	0	0	N/A
KW2	RA-2084-X2	170507	154462	16,045,000	49.24	181	169	12
KW3	RA-2084-X3	74193	71293	2,900,000	8.90	0	0	N/A
KW4	RA-2084-X4	408090	348368	59,722,000	183.28	178	157	21
KW5	RA-2009-S4	227042	215752	11,290,000	34.65	0	0	N/A
KW6	RA-2009-S3	9355	6600	2,755,000	8.45	150	138	12
Kerr WellsTotal Water Produced				**106,342,000**	**326.35**			
TW1	RA-2823	187298	145898	41,400,000	127.05	0	0	N/A
TW2	RA-2823S	192224	149996	42,228,000	129.59	0	0	N/A
Trigg Wells Total Water Produced				**83,628,000**	**256.65**			
RW1	RA-2009	945	847	98,000	0.30	141	121	20
RW3	RA-2025	331605	303643	27,962,000	85.81	133	122	11
RW4	RA-2009S	2036376	2029224	7,152,000	21.95	0	0	N/A
RW5	RA-2009-S2	1714551	1713101	1,450,000	4.45	141	131	10
RIAC Wells Total Water Produced				**36,662,000**	**112.51**			
SMW10	RA-4253	1012908	1001912	10,996,000	33.75	0	0	N/A
SMW11	RA-4255	6763489	6725081	38,408,000	117.87	188	180	8
SMW18	RA-4253S	1112178	1077893	34,285,000	105.22	0	0	N/A
Six Mile Hill Wells Total Water Produced				**83,689,000**	**256.83**			
SRW12	RA-681	2949043	2946651	2,392,000	7.34	0	0	N/A
SRW13	RA-1823	6637445	6612320	25,125,000	77.11	0	0	N/A
SRW15	RA-977C	175324	123497	51,827,000	159.05	109	104	5
SRW16	RA-98S2	1027258	961077	66,181,000	203.10	0	0	N/A
SRW17	RA-98S3	133432	28795	104,637,000	321.12	0	0	N/A
South of Roswell Wells Total Water Produced				**250,162,000**	**767.72**			
Water System Wells Total Water Produced				**560,483,000**	**1,720.06**			
SRW4	RA-98S	30920	27317	3,603,000	11.06			
SRW8	RA-2167	2365545	2341975	23,570,000	72.33			
Dow	RA-339B	1481381	1467256	460,263	1.41			
Joyce	RA-1127	102869	95316	246,115	0.76			
Parks Wells Total Water Produced				**27,879,378**	**85.56**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	106,342,000	326.35	18.07%
Trigg Wells	83,628,000	256.65	14.21%
RIAC Wells	36,662,000	112.51	6.23%
Six Mile Hill Wells	83,689,000	256.83	14.22%
South of Roswell Wells	250,162,000	767.72	42.52%
Park's Wells	27,879,378	85.56	4.74%
Combined Totals	**588,362,378**	**1,805.62**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	588,362,378	1,805.62
Park's Wells	27,879,378	85.56
Park's Meters	40,820,766	125.27
Golf Course Meters	3,285,664	10.08
Cemetery Meters	9,588,200	29.43
Water for Sale	**506,788,370**	**1,555.28**

	Gallons Produced
11/01/10 through 06/30/11	2,888,887,000
11/01/11 through 06/30/12	2,606,089,000
11/01/12 through 06/30/13	2,731,555,000
June 2011	581,396,000
June 2012	582,766,000
June 2013	560,483,000

City of Roswell
Monthly Water Production Report
May 01, 2013 through May 31, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	169717	168501	1,216,000	3.73	0	0	N/A
KW2	RA-2084-X2	154462	136653	17,809,000	54.65	180	169	11
KW3	RA-2084-X3	71293	59489	11,804,000	36.23	0	0	N/A
KW4	RA-2084-X4	348368	303985	44,383,000	136.21	173	149	24
KW5	RA-2009-S4	215752	204958	10,794,000	33.13	157	151	6
KW6	RA-2009-S3	6600	2952	3,648,000	11.20	148	133	15
Kerr WellsTotal Water Produced				**89,654,000**	**275.14**			
TW1	RA-2823	145898	106299	39,599,000	121.53	0	0	N/A
TW2	RA-2823S	149996	108821	41,175,000	126.36	0	0	N/A
Trigg Wells Total Water Produced				**80,774,000**	**247.89**			
RW1	RA-2009	847	582	265,000	0.81	136	115	21
RW3	RA-2025	303643	273663	29,980,000	92.01	129	117	12
RW4	RA-2009S	2029224	2025824	3,400,000	10.43	0	0	N/A
RW5	RA-2009-S2	1713101	1711893	1,208,000	3.71	137	121	16
RIAC Wells Total Water Produced				**34,853,000**	**106.96**			
SMW10	RA-4253	1001912	951077	50,835,000	156.01	0	0	N/A
SMW11	RA-4255	6725081	6670598	54,483,000	167.20	0	0	N/A
SMW18	RA-4253S	1077893	1032818	45,075,000	138.33	0	0	N/A
Six Mile Hill Wells Total Water Produced				**150,393,000**	**461.54**			
SRW12	RA-681	2946651	2936204	10,447,000	32.06	0	0	N/A
SRW13	RA-1823	6612320	6561808	50,512,000	155.02	0	0	N/A
SRW15	RA-977C	123497	57725	65,772,000	201.85	115	101	14
SRW16	RA-98S2	961077	939253	21,824,000	66.98	0	0	N/A
SRW17	RA-98S3	28795	4940	23,855,000	73.21	0	0	N/A
South of Roswell Wells Total Water Produced				**172,410,000**	**529.11**			
Water System Wells Total Water Produced				**528,084,000**	**1,620.64**			
SRW4	RA-98S	27317	27286	31,000	0.10			
SRW8	RA-2167	2341975	2322581	19,394,000	59.52			
Dow	RA-339B	1467256	1452812	470,658	1.44			
Joyce	RA-1127	95316	88097	235,231	0.72			
Parks Wells Total Water Produced				**20,130,889**	**61.78**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	89,654,000	275.14	16.35%
Trigg Wells	80,774,000	247.89	14.73%
RIAC Wells	34,853,000	106.96	6.36%
Six Mile Hill Wells	150,393,000	461.54	27.43%
South of Roswell Wells	172,410,000	529.11	31.45%
Park's Wells	20,130,889	61.78	3.67%
Combined Totals	**548,214,889**	**1,682.41**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	548,214,889	1,682.41
Park's Wells	20,130,889	61.78
Park's Meters	32,852,534	100.82
Golf Course Meters	3,846,740	11.81
Cemetery Meters	8,470,070	25.99
Water for Sale	**482,914,656**	**1,482.02**

	Gallons Produced
11/01/10 through 05/31/11	2,307,491,000
11/01/11 through 05/31/12	2,023,323,000
11/01/12 through 05/31/13	2,171,072,000
May 2011	555,020,000
May 2012	433,589,000
May 2013	528,084,000

City of Roswell
Monthly Water Production Report
August 01, 2013 through August 31, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	258840	226703	32,137,000	98.63	0	0	N/A
KW2	RA-2084-X2	193795	191396	2,399,000	7.36	184	170	14
KW3	RA-2084-X3	91185	88087	3,098,000	9.51	0	0	N/A
KW4	RA-2084-X4	531926	473348	58,578,000	179.77	182	159	23
KW5	RA-2009-S4	264414	246220	18,194,000	55.84	165	159	6
KW6	RA-2009-S3	38385	16966	21,419,000	65.73	151	140	11
Kerr WellsTotal Water Produced				**135,825,000**	**416.83**			
TW1	RA-2823	235135	210397	24,738,000	75.92	0	0	N/A
TW2	RA-2823S	241487	216186	25,301,000	77.65	0	0	N/A
Trigg Wells Total Water Produced				**50,039,000**	**153.56**			
RW1	RA-2009	1371	1074	297,000	0.91	145	125	20
RW3	RA-2025	385410	357186	28,224,000	86.62	136	124	12
RW4	RA-2009S	2041371	2039090	2,281,000	7.00	0	0	N/A
RW5	RA-2009-S2	1716289	1714764	1,525,000	4.68	147	136	11
RIAC Wells Total Water Produced				**32,327,000**	**99.21**			
SMW10	RA-4253	1024902	1015591	9,311,000	28.57	0	0	N/A
SMW11	RA-4255	6899563	6833121	66,442,000	203.90	191	181	10
SMW18	RA-4253S	3514	54	3,460,000	10.62	0	0	N/A
Six Mile Hill Wells Total Water Produced				**79,213,000**	**243.10**			
SRW12	RA-681	15	15	0	0.00	0	0	N/A
SRW13	RA-1823	6648285	6642570	5,715,000	17.54	0	0	N/A
SRW15	RA-977C	217430	189690	27,740,000	85.13	112	107	5
SRW16	RA-98S2	1110832	1060548	50,284,000	154.32	0	0	N/A
SRW17	RA-98S3	312514	217954	94,560,000	290.19	0	0	N/A
South of Roswell Wells Total Water Produced				**178,299,000**	**547.18**			
Water System Wells Total Water Produced				**475,703,000**	**1,459.88**			
SRW4	RA-98S	33042	31459	1,583,000	4.86			
SRW8	RA-2167	2393639	2376645	16,994,000	52.15			
Dow	RA-339B	1509356	1495800	441,722	1.36			
Joyce	RA-1127	114018	107861	200,626	0.62			
Parks Wells Total Water Produced				**19,219,348**	**58.98**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	135,825,000	416.83	27.44%
Trigg Wells	50,039,000	153.56	10.11%
RIAC Wells	32,327,000	99.21	6.53%
Six Mile Hill Wells	79,213,000	243.10	16.01%
South of Roswell Wells	178,299,000	547.18	36.03%
Park's Wells	19,219,348	58.98	3.88%
Combined Totals	**494,922,348**	**1,518.87**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	494,922,348	1,518.87
Park's Wells	19,219,348	58.98
Park's Meters	32,608,464	100.07
Golf Course Meters	2,404,895	7.38
Cemetery Meters	8,695,710	26.69
Water for Sale	**431,993,931**	**1,325.74**

	Gallons Produced
11/01/10 through 08/31/11	4,096,583,000
11/01/11 through 08/31/12	3,741,120,000
11/01/12 through 08/31/13	3,663,147,000
August 2011	579,812,000
August 2012	539,350,000
August 2013	475,703,000

City of Roswell
Monthly Water Production Report
July 01, 2013 through July 31, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	226703	183347	43,356,000	133.06	0	0	N/A
KW2	RA-2084-X2	191396	170507	20,889,000	64.11	185	175	10
KW3	RA-2084-X3	88087	74193	13,894,000	42.64	0	0	N/A
KW4	RA-2084-X4	473348	408090	65,258,000	200.27	180	159	21
KW5	RA-2009-S4	246220	227042	19,178,000	58.86	163	157	6
KW6	RA-2009-S3	16966	9355	7,611,000	23.36	150	137	13
Kerr WellsTotal Water Produced				**170,186,000**	**522.28**			
TW1	RA-2823	210397	187298	23,099,000	70.89	0	0	N/A
TW2	RA-2823S	216186	192224	23,962,000	73.54	0	0	N/A
Trigg Wells Total Water Produced				**47,061,000**	**144.43**			
RW1	RA-2009	1074	945	129,000	0.40	142	130	12
RW3	RA-2025	357186	331605	25,581,000	78.51	136	124	12
RW4	RA-2009S	2039090	2036376	2,714,000	8.33	0	0	N/A
RW5	RA-2009-S2	1714764	1714551	213,000	0.65	144	135	9
RIAC Wells Total Water Produced				**28,637,000**	**87.88**			
SMW10	RA-4253	1015591	1012908	2,683,000	8.23	0	0	N/A
SMW11	RA-4255	6833121	6763489	69,632,000	213.69	191	180	11
SMW18	RA-4253S	1112178	1112178	0	0.00	0	0	N/A
Six Mile Hill Wells Total Water Produced				**72,315,000**	**221.93**			
SRW12	RA-681	2949430	2949043	387,000	1.19	0	0	N/A
SRW13	RA-1823	6642570	6637445	5,125,000	15.73	0	0	N/A
SRW15	RA-977C	189690	175324	14,366,000	44.09	111	105	6
SRW16	RA-98S2	1060548	1027258	33,290,000	102.16	0	0	N/A
SRW17	RA-98S3	217954	133432	84,522,000	259.39	0	0	N/A
South of Roswell Wells Total Water Produced				**137,690,000**	**422.56**			
Water System Wells Total Water Produced				**455,889,000**	**1,399.08**			
SRW4	RA-98S	31459	30920	539,000	1.65			
SRW8	RA-2167	2376645	2365545	11,100,000	34.06			
Dow	RA-339B	1495800	1481381	469,843	1.44			
Joyce	RA-1127	107861	102869	162,664	0.50			
Parks Wells Total Water Produced				**12,271,507**	**37.66**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	170,186,000	522.28	36.35%
Trigg Wells	47,061,000	144.43	10.05%
RIAC Wells	28,637,000	87.88	6.12%
Six Mile Hill Wells	72,315,000	221.93	15.45%
South of Roswell Wells	137,690,000	422.56	29.41%
Park's Wells	12,271,507	37.66	2.62%
Combined Totals	**468,160,507**	**1,436.74**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	468,160,507	1,436.74
Park's Wells	12,271,507	37.66
Park's Meters	30,327,647	93.07
Golf Course Meters	1,582,469	4.86
Cemetery Meters	6,777,210	20.80
Water for Sale	**417,201,674**	**1,280.35**

	Gallons Produced
11/01/10 through 07/31/11	3,516,771,000
11/01/11 through 07/31/12	3,201,770,000
11/01/12 through 07/31/13	3,187,444,000
July 2011	627,884,000
July 2012	595,681,000
July 2013	455,889,000

City of Roswell
Monthly Water Production Report
October 01, 2013 through October 31, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	259205	259192	13,000	0.04	0	0	N/A
KW2	RA-2084-X2	196143	196125	18,000	0.06	184	174	10
KW3	RA-2084-X3	102142	101466	676,000	2.07	0	0	N/A
KW4	RA-2084-X4	588178	585370	2,808,000	8.62	176	151	25
KW5	RA-2009-S4	276225	276121	104,000	0.32	162	155	7
KW6	RA-2009-S3	63325	63271	54,000	0.17	147	137	10
Kerr Wells Total Water Produced				**3,673,000**	**11.27**			
TW1	RA-2823	269838	268656	1,182,000	3.63	0	0	N/A
TW2	RA-2823S	276871	275620	1,251,000	3.84	0	0	N/A
Trigg Wells Total Water Produced				**2,433,000**	**7.47**			
RW1	RA-2009	1566	1465	101,000	0.31	131	115	16
RW3	RA-2025	420503	406784	13,719,000	42.10	124	114	10
RW4	RA-2009S	3229	17	3,212,000	9.86	0	0	N/A
RW5	RA-2009-S2	1717222	1717024	198,000	0.61	139	133	6
RIAC Wells Total Water Produced				**17,230,000**	**52.88**			
SMW10	RA-4253	1030952	1029140	1,812,000	5.56	0	0	N/A
SMW11	RA-4255	6912490	6904781	7,709,000	23.66	0	0	N/A
SMW18	RA-4253S	78832	50349	28,483,000	87.41	0	0	N/A
Six Mile Hill Wells Total Water Produced				**38,004,000**	**116.63**			
SRW12	RA-681	1545	544	1,001,000	3.07	0	0	N/A
SRW13	RA-1823	30075	6073	24,002,000	73.66	0	0	N/A
SRW15	RA-977C	272449	234498	37,951,000	116.47	103	99	4
SRW16	RA-98S2	1204468	1143424	61,044,000	187.34	0	0	N/A
SRW17	RA-98S3	494294	388165	106,129,000	325.70	0	0	N/A
South of Roswell Wells Total Water Produced				**230,127,000**	**706.24**			
Water System Wells Total Water Produced				**291,467,000**	**894.48**			
SRW4	RA-98S	34624	34624	0	0.00			
SRW8	RA-2167	2412344	2405736	6,608,000	20.28			
Dow	RA-339B	1535560	1516274	628,434	1.93			
Joyce	RA-1127	123347	118346	162,958	0.50			
Parks Wells Total Water Produced				**7,399,392**	**22.71**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	3,673,000	11.27	1.23%
Trigg Wells	2,433,000	7.47	0.81%
RIAC Wells	17,230,000	52.88	5.77%
Six Mile Hill Wells	38,004,000	116.63	12.72%
South of Roswell Wells	230,127,000	706.24	77.00%
Park's Wells	7,399,392	22.71	2.48%
Combined Totals	**298,866,392**	**917.19**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	298,866,392	917.19
Park's Wells	7,399,392	22.71
Park's Meters	18,530,197	56.87
Golf Course Meters	1,089,686	3.34
Cemetery Meters	6,517,130	20.00
Water for Sale	**265,329,987**	**814.27**

	Gallons Produced
11/01/10 through 10/31/11	4,913,262,000
11/01/11 through 10/31/12	4,501,075,000
11/01/12 through 10/31/13	4,335,609,000
October 2011	361,453,000
October 2012	351,482,000
October 2013	291,467,000

City of Roswell
Monthly Water Production Report
September 01, 2013 through September 30, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	259192	258840	352,000	1.08	0	0	N/A
KW2	RA-2084-X2	196125	193795	2,330,000	7.15	186	175	11
KW3	RA-2084-X3	101466	91185	10,281,000	31.55	0	0	N/A
KW4	RA-2084-X4	585370	531926	53,444,000	164.01	176	152	24
KW5	RA-2009-S4	276121	264414	11,707,000	35.93	159	152	7
KW6	RA-2009-S3	63271	38385	24,886,000	76.37	148	135	13
Kerr Wells Total Water Produced				**103,000,000**	**316.10**			
TW1	RA-2823	268656	235135	33,521,000	102.87	0	0	N/A
TW2	RA-2823S	275620	241487	34,133,000	104.75	0	0	N/A
Trigg Wells Total Water Produced				**67,654,000**	**207.62**			
RW1	RA-2009	1465	1371	94,000	0.29	134	115	19
RW3	RA-2025	406784	385410	21,374,000	65.59	126	114	12
RW4	RA-2009S	2041371	2041371	0	0.00	0	0	N/A
RW5	RA-2009-S2	1717024	1716289	735,000	2.26	137	130	7
RIAC Wells Total Water Produced				**22,203,000**	**68.14**			
SMW10	RA-4253	1029140	1024902	4,238,000	13.01	0	0	N/A
SMW11	RA-4255	6904781	6899563	5,218,000	16.01	187	180	7
SMW18	RA-4253S	50349	3514	46,835,000	143.73	0	0	N/A
Six Mile Hill Wells Total Water Produced				**56,291,000**	**172.75**			
SRW12	RA-681	544	15	529,000	1.62	0	0	N/A
SRW13	RA-1823	6073	66	6,007,000	18.43	0	0	N/A
SRW15	RA-977C	234498	217430	17,068,000	52.38	123	101	22
SRW16	RA-98S2	1143424	1110832	32,592,000	100.02	0	0	N/A
SRW17	RA-98S3	388165	312514	75,651,000	232.17	0	0	N/A
South of Roswell Wells Total Water Produced				**131,847,000**	**404.62**			
Water System Wells Total Water Produced				**380,995,000**	**1,169.23**			
SRW4	RA-98S	34624	33042	1,582,000	4.85			
SRW8	RA-2167	2405736	2393639	12,097,000	37.12			
Dow	RA-339B	1516274	1509356	225,423	0.69			
Joyce	RA-1127	118346	114018	141,028	0.43			
Parks Wells Total Water Produced				**14,045,451**	**43.10**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	103,000,000	316.10	26.07%
Trigg Wells	67,654,000	207.62	17.13%
RIAC Wells	22,203,000	68.14	5.62%
Six Mile Hill Wells	56,291,000	172.75	14.25%
South of Roswell Wells	131,847,000	404.62	33.38%
Park's Wells	14,045,451	43.10	3.56%
Combined Totals	**395,040,451**	**1,212.34**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	395,040,451	1,212.34
Park's Wells	14,045,451	43.10
Park's Meters	22,169,300	68.04
Golf Course Meters	2,829,160	8.68
Cemetery Meters	4,992,730	15.32
Water for Sale	**351,003,810**	**1,077.19**

	Gallons Produced
11/01/10 through 09/30/11	4,551,809,000
11/01/11 through 09/30/12	4,149,593,000
11/01/12 through 09/30/13	4,044,142,000
September 2011	455,226,000
September 2012	408,473,000
September 2013	380,995,000

City of Roswell
Monthly Water Production Report
December 01, 2013 through December 31, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	259205	259205	0	0.00	0	0	N/A
KW2	RA-2084-X2	196143	196143	0	0.00	0	0	N/A
KW3	RA-2084-X3	102142	102142	0	0.00	0	0	N/A
KW4	RA-2084-X4	588895	588895	0	0.00	0	0	N/A
KW5	RA-2009-S4	276225	276225	0	0.00	0	0	N/A
KW6	RA-2009-S3	63325	63325	0	0.00	0	0	N/A
Kerr WellsTotal Water Produced				**0**	**0.00**			
TW1	RA-2823	271314	270519	795,000	2.44	0	0	N/A
TW2	RA-2823S	278887	278573	314,000	0.96	0	0	N/A
Trigg Wells Total Water Produced				**1,109,000**	**3.40**			
RW1	RA-2009	1874	1665	209,000	0.64	124	104	20
RW3	RA-2025	443248	433140	10,108,000	31.02	115	105	10
RW4	RA-2009S	3615	3492	123,000	0.38	0	0	N/A
RW5	RA-2009-S2	1717605	1717386	219,000	0.67	129	118	11
RIAC Wells Total Water Produced				**10,659,000**	**32.71**			
SMW10	RA-4253	1030952	1030952	0	0.00	0	0	N/A
SMW11	RA-4255	6912490	6912490	0	0.00	0	0	N/A
SMW18	RA-4253S	78832	78832	0	0.00	0	0	N/A
Six Mile Hill Wells Total Water Produced				**0**	**0.00**			
SRW12	RA-681	4521	4431	90,000	0.28	0	0	N/A
SRW13	RA-1823	44698	44381	317,000	0.97	0	0	N/A
SRW15	RA-977C	322909	314051	8,858,000	27.18	102	92	10
SRW16	RA-98S2	1324650	1263564	61,086,000	187.47	0	0	N/A
SRW17	RA-98S3	702233	604514	97,719,000	299.89	0	0	N/A
South of Roswell Wells Total Water Produced				**168,070,000**	**515.79**			
Water System Wells Total Water Produced				**179,838,000**	**551.90**			
SRW4	RA-98S	34624	34624	0	0.00			
SRW8	RA-2167	2415927	2415927	0	0.00			
Dow	RA-339B	1549262	1548959	9,873	0.03			
Joyce	RA-1127	127641	125964	54,645	0.17			
Parks Wells Total Water Produced				**64,518**	**0.20**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	0	0.00	0.00%
Trigg Wells	1,109,000	3.40	0.62%
RIAC Wells	10,659,000	32.71	5.92%
Six Mile Hill Wells	0	0.00	0.00%
South of Roswell Wells	168,070,000	515.79	93.42%
Park's Wells	64,518	0.20	0.04%
Combined Totals	**179,902,518**	**552.10**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	179,902,518	552.10
Park's Wells	64,518	0.20
Park's Meters	4,309,499	13.23
Golf Course Meters	555,539	1.70
Cemetery Meters	102,230	0.31
Water for Sale	**174,870,732**	**536.66**

	Gallons Produced
11/01/11 through 12/31/11	450,386,000
11/01/12 through 12/31/12	455,207,000
11/01/13 through 12/31/13	424,211,000
December 2011	194,624,000
December 2012	201,037,000
December 2013	179,838,000

City of Roswell
Monthly Water Production Report
November 01, 2013 through November 30, 2013

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	259205	259205	0	0.00	0	0	N/A
KW2	RA-2084-X2	196143	196143	0	0.00	0	0	N/A
KW3	RA-2084-X3	102142	102142	0	0.00	0	0	N/A
KW4	RA-2084-X4	588895	588178	717,000	2.20	0	0	N/A
KW5	RA-2009-S4	276225	276225	0	0.00	0	0	N/A
KW6	RA-2009-S3	63325	63325	0	0.00	0	0	N/A
Kerr WellsTotal Water Produced				**717,000**	**2.20**			
TW1	RA-2823	270519	269838	681,000	2.09	0	0	N/A
TW2	RA-2823S	278573	276871	1,702,000	5.22	0	0	N/A
Trigg Wells Total Water Produced				**2,383,000**	**7.31**			
RW1	RA-2009	1665	1566	99,000	0.30	145	121	24
RW3	RA-2025	433140	420503	12,637,000	38.78	157	142	15
RW4	RA-2009S	3492	3229	263,000	0.81	0	0	N/A
RW5	RA-2009-S2	1717386	1717222	164,000	0.50	130	120	10
RIAC Wells Total Water Produced				**13,163,000**	**40.40**			
SMW10	RA-4253	1030952	1030952	0	0.00	0	0	N/A
SMW11	RA-4255	6912490	6912490	0	0.00			0
SMW18	RA-4253S	78832	78832	0	0.00	0	0	N/A
Six Mile Hill Wells Total Water Produced				**0**	**0.00**			
SRW12	RA-681	4431	1545	2,886,000	8.86	0	0	N/A
SRW13	RA-1823	44381	30075	14,306,000	43.90	0	0	N/A
SRW15	RA-977C	314051	272449	41,602,000	127.67	100	95	5
SRW16	RA-98S2	1263564	1204468	59,096,000	181.36	0	0	N/A
SRW17	RA-98S3	604514	494294	110,220,000	338.25	0	0	N/A
South of Roswell Wells Total Water Produced				**228,110,000**	**700.05**			
Water System Wells Total Water Produced				**244,373,000**	**749.96**			
SRW4	RA-98S	34624	34624	0	0.00			
SRW8	RA-2167	2415927	2412344	3,583,000	11.00			
Dow	RA-339B	1548959	1535560	436,606	1.34			
Joyce	RA-1127	125964	123347	85,275	0.26			
Parks Wells Total Water Produced				**4,104,881**	**12.60**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	717,000	2.20	0.29%
Trigg Wells	2,383,000	7.31	0.96%
RIAC Wells	13,163,000	40.40	5.30%
Six Mile Hill Wells	0	0.00	0.00%
South of Roswell Wells	228,110,000	700.05	91.80%
Park's Wells	4,104,881	12.60	1.65%
Combined Totals	**248,477,881**	**762.55**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	248,477,881	762.55
Park's Wells	4,104,881	12.60
Park's Meters	12,802,760	39.29
Golf Course Meters	1,206,075	3.70
Cemetery Meters	2,943,870	9.03
Water for Sale	**227,420,295**	**697.93**

	Gallons Produced
11/01/11 through 11/30/11	255,762,000
11/01/12 through 11/30/12	254,170,000
11/01/13 through 11/30/13	244,373,000
November 2011	255,762,000
November 2012	254,170,000
November 2013	244,373,000

City of Roswell
Monthly Water Production Report
February 01, 2014 through February 28, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	260294	259229	1,065,000	3.27	0	0	N/A
KW2	RA-2084-X2	196789	196173	616,000	1.89	169	157	12
KW3	RA-2084-X3	104515	104365	150,000	0.46	0	0	N/A
KW4	RA-2084-X4	593402	588906	4,496,000	13.80	166	144	22
KW5	RA-2009-S4	276478	276239	239,000	0.73	148	141	7
KW6	RA-2009-S3	63469	63348	121,000	0.37	136	124	12
Kerr WellsTotal Water Produced				**6,687,000**	**20.52**			
TW1	RA-2823	274571	272310	2,261,000	6.94	0	0	N/A
TW2	RA-2823S	283566	280288	3,278,000	10.06	0	0	N/A
Trigg Wells Total Water Produced				**5,539,000**	**17.00**			
RW1	RA-2009	2063	1951	112,000	0.34	121	105	16
RW3	RA-2025	461516	452615	8,901,000	27.32	0	0	N/A
RW4	RA-2009S	3758	3663	95,000	0.29	0	0	N/A
RW5	RA-2009-S2	1782	810	972,000	2.98	127	118	9
RIAC Wells Total Water Produced				**10,080,000**	**30.93**			
SMW10	RA-4253	6094	0	6,094,000	18.70	0	0	N/A
SMW11	RA-4255	5404	0	5,404,000	16.58	182	174	8
SMW18	RA-4253S	85432	78832	6,600,000	20.25	0	0	N/A
Six Mile Hill Wells Total Water Produced				**18,098,000**	**55.54**			
SRW12	RA-681	10622	4588	6,034,000	18.52	0	0	N/A
SRW13	RA-1823	98508	52824	45,684,000	140.20	0	0	N/A
SRW15	RA-977C	394023	358567	35,456,000	108.81	103	96	7
SRW16	RA-98S2	1385053	1377944	7,109,000	21.82	0	0	N/A
SRW17	RA-98S3	900181	814161	86,020,000	263.99	0	0	N/A
South of Roswell Wells Total Water Produced				**180,303,000**	**553.33**			
Water System Wells Total Water Produced				**220,707,000**	**677.33**			
SRW4	RA-98S	34624	34624	0	0.00			
SRW8	RA-2167	2423084	2418035	5,049,000	15.49			
Dow	RA-339B	1553625	1552318	42,589	0.13			
Joyce	RA-1127	132030	129347	87,426	0.27			
Parks Wells Total Water Produced				**5,179,014**	**15.89**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	6,687,000	20.52	2.96%
Trigg Wells	5,539,000	17.00	2.45%
RIAC Wells	10,080,000	30.93	4.46%
Six Mile Hill Wells	18,098,000	55.54	8.01%
South of Roswell Wells	180,303,000	553.33	79.82%
Park's Wells	5,179,014	15.89	2.29%
Combined Totals	**225,886,014**	**693.22**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	225,886,014	693.22
Park's Wells	5,179,014	15.89
Park's Meters	6,259,631	19.21
Golf Course Meters	979,432	3.01
Cemetery Meters	3,368,780	10.34
Water for Sale	**210,099,157**	**644.77**

	Gallons Produced
11/01/11 through 02/28/12	832,339,000
11/01/12 through 02/28/13	881,382,000
11/01/13 through 02/28/14	868,995,000
February 2012	171,006,000
February 2013	210,746,000
February 2014	220,707,000

City of Roswell
Monthly Water Production Report
January 01, 2014 through January 31, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	259229	259205	24,000	0.07	0	0	N/A
KW2	RA-2084-X2	196173	196143	30,000	0.09	169	157	12
KW3	RA-2084-X3	104365	102142	2,223,000	6.82	0	0	N/A
KW4	RA-2084-X4	588906	588895	11,000	0.03	166	163	3
KW5	RA-2009-S4	276239	276225	14,000	0.04	148	141	7
KW6	RA-2009-S3	63348	63325	23,000	0.07	148	123	25
Kerr WellsTotal Water Produced				**2,325,000**	**7.14**			
TW1	RA-2823	272310	271314	996,000	3.06	0	0	N/A
TW2	RA-2823S	280288	278887	1,401,000	4.30	0	0	N/A
Trigg Wells Total Water Produced				**2,397,000**	**7.36**			
RW1	RA-2009	1951	1874	77,000	0.24	123	103	20
RW3	RA-2025	452615	443248	9,367,000	28.75	114	103	11
RW4	RA-2009S	3663	3615	48,000	0.15	0	0	N/A
RW5	RA-2009-S2			790,000	2.42	127	117	10
RIAC Wells Total Water Produced				**10,282,000**	**31.55**			
SMW10	RA-4253	0	0	0	0.00	0	0	N/A
SMW11	RA-4255	0	0	0	0.00	0	0	N/A
SMW18	RA-4253S	78832	78832	0	0.00	0	0	N/A
Six Mile Hill Wells Total Water Produced				**0**	**0.00**			
SRW12	RA-681	4588	4521	67,000	0.21	0	0	N/A
SRW13	RA-1823	52824	44698	8,126,000	24.94	0	0	N/A
SRW15	RA-977C	358567	322909	35,658,000	109.43	102	90	12
SRW16	RA-98S2	1377944	1324650	53,294,000	163.55	0	0	N/A
SRW17	RA-98S3	814161	702233	111,928,000	343.50	0	0	N/A
South of Roswell Wells Total Water Produced				**209,073,000**	**641.62**			
Water System Wells Total Water Produced				**224,077,000**	**687.67**			
SRW4	RA-98S	34624	34624	0	0.00			
SRW8	RA-2167	2418035	2415927	2,108,000	6.47			
Dow	RA-339B	1552318	1549262	99,580	0.31			
Joyce	RA-1127	129347	127641	55,590	0.17			
Parks Wells Total Water Produced				**2,263,170**	**6.95**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	2,325,000	7.14	1.03%
Trigg Wells	2,397,000	7.36	1.06%
RIAC Wells	10,282,000	31.55	4.54%
Six Mile Hill Wells	0	0.00	0.00%
South of Roswell Wells	209,073,000	641.62	92.37%
Park's Wells	2,263,170	6.95	1.00%
Combined Totals	**226,340,170**	**694.61**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	226,340,170	694.61
Park's Wells	2,263,170	6.95
Park's Meters	12,079,876	37.07
Golf Course Meters	1,122,823	3.45
Cemetery Meters	420,820	1.29
Water for Sale	**210,453,481**	**645.86**

	Gallons Produced
11/01/11 through 01/31/12	661,333,000
11/01/12 through 01/31/13	670,636,000
11/01/13 through 01/31/14	648,288,000
January 2012	210,947,000
January 2013	215,429,000
January 2014	224,077,000

City of Roswell
Monthly Water Production Report
April 01, 2014 through April 30, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	272721	260301	12,420,000	38.12	0	0	N/A
KW2	RA-2084-X2	199495	196812	2,683,000	8.23	171	165	6
KW3	RA-2084-X3	113764	110962	2,802,000	8.60	0	0	N/A
KW4	RA-2084-X4	663993	625656	38,337,000	117.65	172	149	23
KW5	RA-2009-S4	312502	278893	33,609,000	103.14	153	147	6
KW6	RA-2009-S3	89487	79715	9,772,000	29.99	144	130	14
Kerr WellsTotal Water Produced				**99,623,000**	**305.73**			
TW1	RA-2823	283523	283387	136,000	0.42	0	0	N/A
TW2	RA-2823S	297592	297344	248,000	0.76	0	0	N/A
Trigg Wells Total Water Produced				**384,000**	**1.18**			
RW1	RA-2009	2340	2231	109,000	0.33	130	114	16
RW3	RA-2025	488529	468617	19,912,000	61.11	124	114	10
RW4	RA-2009S	9963	8326	1,637,000	5.02	0	0	N/A
RW5	RA-2009-S2	2982	2479	503,000	1.54	131	125	6
RIAC Wells Total Water Produced				**22,161,000**	**68.01**			
SMW10	RA-4253	136957	68255	68,702,000	210.84	0	0	N/A
SMW11	RA-4255	153584	78800	74,784,000	229.50	185	176	9
SMW18	RA-4253S	181882	135088	46,794,000	143.61	0	0	N/A
Six Mile Hill Wells Total Water Produced				**190,280,000**	**583.95**			
SRW12	RA-681	11057	10752	305,000	0.94	0	0	N/A
SRW13	RA-1823	99920	98906	1,014,000	3.11	0	0	N/A
SRW15	RA-977C	405319	394918	10,401,000	31.92	102	96	6
SRW16	RA-98S2	1482333	1413262	69,071,000	211.97	116	109	7
SRW17	RA-98S3	951703	928596	23,107,000	70.91	0	0	N/A
South of Roswell Wells Total Water Produced				**103,898,000**	**318.85**			
Water System Wells Total Water Produced				**416,346,000**	**1,277.72**			
SRW4	RA-98S	34624	34624	0	0.00			
SRW8	RA-2167	2440497	2428408	12,089,000	37.10			
Dow	RA-339B	1580899	1557657	757,341	2.32			
Joyce	RA-1127	140041	135977	132,425	0.41			
Parks Wells Total Water Produced				**12,978,766**	**39.83**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	99,623,000	305.73	23.20%
Trigg Wells	384,000	1.18	0.09%
RIAC Wells	22,161,000	68.01	5.16%
Six Mile Hill Wells	190,280,000	583.95	44.32%
South of Roswell Wells	103,898,000	318.85	24.20%
Park's Wells	12,978,766	39.83	3.02%
Combined Totals	**429,324,766**	**1,317.55**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	429,324,766	1,317.55
Park's Wells	12,978,766	39.83
Park's Meters	28,976,865	88.93
Golf Course Meters	1,888,999	5.80
Cemetery Meters	7,128,820	21.88
Water for Sale	**378,351,316**	**1,161.12**

	Gallons Produced
11/01/11 through 04/30/12	1,589,734,000
11/01/12 through 04/30/13	1,642,988,000
11/01/13 through 04/30/14	1,621,121,000
April 2012	386,602,000
April 2013	416,587,000
April 2014	416,346,000

City of Roswell
Monthly Water Production Report
March 01, 2014 through March 31, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	260301	260294	7,000	0.02	0	0	N/A
KW2	RA-2084-X2	196812	196789	23,000	0.07	170	165	5
KW3	RA-2084-X3	110962	104515	6,447,000	19.79	0	0	N/A
KW4	RA-2084-X4	625656	593402	32,254,000	98.98	170	148	22
KW5	RA-2009-S4	278893	276478	2,415,000	7.41	151	145	6
KW6	RA-2009-S3	79715	63469	16,246,000	49.86	141	128	13
Kerr WellsTotal Water Produced				**57,392,000**	**176.13**			
TW1	RA-2823	283387	274571	8,816,000	27.06	0	0	N/A
TW2	RA-2823S	297344	283566	13,778,000	42.28	0	0	N/A
Trigg Wells Total Water Produced				**22,594,000**	**69.34**			
RW1	RA-2009	2231	2063	168,000	0.52	127	113	14
RW3	RA-2025	468617	461516	7,101,000	21.79	121	110	11
RW4	RA-2009S	8326	3758	4,568,000	14.02	0	0	N/A
RW5	RA-2009-S2	2479	1782	697,000	2.14	130	121	9
RIAC Wells Total Water Produced				**12,534,000**	**38.47**			
SMW10	RA-4253	68255	6094	62,161,000	190.77	0	0	N/A
SMW11	RA-4255	78800	5404	73,396,000	225.24	182	174	8
SMW18	RA-4253S	135088	85432	49,656,000	152.39	0	0	N/A
Six Mile Hill Wells Total Water Produced				**185,213,000**	**568.40**			
SRW12	RA-681	10752	10622	130,000	0.40	0	0	N/A
SRW13	RA-1823	98906	98508	398,000	1.22	0	0	N/A
SRW15	RA-977C	394918	394023	895,000	2.75	120	115	5
SRW16	RA-98S2	1413262	1385053	28,209,000	86.57	114	105	9
SRW17	RA-98S3	928596	900181	28,415,000	87.20	0	0	N/A
South of Roswell Wells Total Water Produced				**58,047,000**	**178.14**			
Water System Wells Total Water Produced				**335,780,000**	**1,030.47**			
SRW4	RA-98S	34624	34624	0	0.00			
SRW8	RA-2167	2428408	2423084	5,324,000	16.34			
Dow	RA-339B	1557657	1553625	131,383	0.40			
Joyce	RA-1127	135977	132030	128,613	0.39			
Parks Wells Total Water Produced				**5,583,996**	**17.14**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	57,392,000	176.13	16.81%
Trigg Wells	22,594,000	69.34	6.62%
RIAC Wells	12,534,000	38.47	3.67%
Six Mile Hill Wells	185,213,000	568.40	54.26%
South of Roswell Wells	58,047,000	178.14	17.00%
Park's Wells	5,583,996	17.14	1.64%
Combined Totals	**341,363,996**	**1,047.61**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	341,363,996	1,047.61
Park's Wells	5,583,996	17.14
Park's Meters	9,516,457	29.21
Golf Course Meters	1,043,011	3.20
Cemetery Meters	2,876,940	8.83
Water for Sale	**322,343,592**	**989.24**

	Gallons Produced
11/01/11 through 03/31/12	1,203,132,000
11/01/12 through 03/31/13	1,226,401,000
11/01/13 through 03/31/14	1,204,775,000
March 2012	370,793,000
March 2013	345,019,000
March 2014	335,780,000

City of Roswell
Monthly Water Production Report
June 01, 2014 through June 30, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	295613	272748	22,865,000	70.17	0	0	N/A
KW2	RA-2084-X2	204842	199520	5,322,000	16.33	180	167	13
KW3	RA-2084-X3	113773	113766	7,000	0.02	0	0	N/A
KW4	RA-2084-X4	726713	664845	61,868,000	189.87	175	153	22
KW5	RA-2009-S4	368710	312556	56,154,000	172.33	157	152	5
KW6	RA-2009-S3	106433	89534	16,899,000	51.86	146	134	12
Kerr WellsTotal Water Produced				**163,115,000**	**500.58**			
TW1	RA-2823	283537	283531	6,000	0.02	0	0	N/A
TW2	RA-2823S	297749	297625	124,000	0.38	0	0	N/A
Trigg Wells Total Water Produced				**130,000**	**0.40**			
RW1	RA-2009	2730	2634	96,000	0.29	135	117	18
RW3	RA-2025	538209	512264	25,945,000	79.62	130	118	12
RW4	RA-2009S	13149	11402	1,747,000	5.36	0	0	N/A
RW5	RA-2009-S2	4549	3625	924,000	2.84	139	130	9
RIAC Wells Total Water Produced				**28,712,000**	**88.11**			
SMW10	RA-4253	276196	205717	70,479,000	216.29	0	0	N/A
SMW11	RA-4255	304615	229610	75,005,000	230.18	183	172	11
SMW18	RA-4253S	277770	229036	48,734,000	149.56	0	0	N/A
Six Mile Hill Wells Total Water Produced				**194,218,000**	**596.03**			
SRW12	RA-681	13102	12511	591,000	1.81	0	0	N/A
SRW13	RA-1823	109750	107975	1,775,000	5.45	0	0	N/A
SRW15	RA-977C	445170	440573	4,597,000	14.11	108	100	8
SRW16	RA-98S2	1659673	1584315	75,358,000	231.27	118	112	6
SRW17	RA-98S3	1070780	1040678	30,102,000	92.38	0	0	N/A
South of Roswell Wells Total Water Produced				**112,423,000**	**345.01**			
Water System Wells Total Water Produced				**498,598,000**	**1,530.15**			
SRW4	RA-98S	35051	35050	1,000	0.00			
SRW8	RA-2167	2473171	2455574	17,597,000	54.00			
Dow	RA-339B	1613012	1598557	471,016	1.45			
Joyce	RA-1127	148896	145764	102,056	0.31			
Parks Wells Total Water Produced				**18,171,072**	**55.77**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	163,115,000	500.58	31.56%
Trigg Wells	130,000	0.40	0.03%
RIAC Wells	28,712,000	88.11	5.56%
Six Mile Hill Wells	194,218,000	596.03	37.58%
South of Roswell Wells	112,423,000	345.01	21.75%
Park's Wells	18,171,072	55.77	3.52%
Combined Totals	**516,769,072**	**1,585.91**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	516,769,072	1,585.91
Park's Wells	18,171,072	55.77
Park's Meters	28,462,615	87.35
Golf Course Meters	3,316,856	10.18
Cemetery Meters	6,653,990	20.42
Water for Sale	**460,164,539**	**1,412.20**

	Gallons Produced
11/01/11 through 06/30/12	2,606,089,000
11/01/12 through 06/30/13	2,731,555,000
11/01/13 through 06/30/14	2,574,538,000
June 2012	582,766,000
June 2013	560,483,000
June 2014	498,598,000

City of Roswell
Monthly Water Production Report
May 01, 2014 through May 31, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	272748	272721	27,000	0.08	0	0	N/A
KW2	RA-2084-X2	199520	199495	25,000	0.08	166	165	1
KW3	RA-2084-X3	113766	113764	2,000	0.01	0	0	N/A
KW4	RA-2084-X4	664845	663993	852,000	2.61	170	151	19
KW5	RA-2009-S4	312556	312502	54,000	0.17	154	152	2
KW6	RA-2009-S3	89534	89487	47,000	0.14	138	125	13
Kerr WellsTotal Water Produced				**1,007,000**	**3.09**			
TW1	RA-2823	283531	283523	8,000	0.02	0	0	N/A
TW2	RA-2823S	297625	297592	33,000	0.10	0	0	N/A
Trigg Wells Total Water Produced				**41,000**	**0.13**			
RW1	RA-2009	2634	2340	294,000	0.90	130	112	18
RW3	RA-2025	512264	488529	23,735,000	72.84	121	115	6
RW4	RA-2009S	11402	9963	1,439,000	4.42	0	0	N/A
RW5	RA-2009-S2	3625	2982	643,000	1.97	132	124	8
RIAC Wells Total Water Produced				**26,111,000**	**80.13**			
SMW10	RA-4253	205717	136957	68,760,000	211.02	0	0	N/A
SMW11	RA-4255	229610	153584	76,026,000	233.32	185	176	9
SMW18	RA-4253S	229036	181882	47,154,000	144.71	0	0	N/A
Six Mile Hill Wells Total Water Produced				**191,940,000**	**589.04**			
SRW12	RA-681	12511	11057	1,454,000	4.46	0	0	N/A
SRW13	RA-1823	107975	99920	8,055,000	24.72	0	0	N/A
SRW15	RA-977C	440573	405319	35,254,000	108.19	102	96	6
SRW16	RA-98S2	1584315	1482333	101,982,000	312.97	115	108	7
SRW17	RA-98S3	1040678	951703	88,975,000	273.06	0	0	N/A
South of Roswell Wells Total Water Produced				**235,720,000**	**723.40**			
Water System Wells Total Water Produced				**454,819,000**	**1,395.79**			
SRW4	RA-98S	35050	34624	426,000	1.31			
SRW8	RA-2167	2455574	2440497	15,077,000	46.27			
Dow	RA-339B	1598557	1580899	575,386	1.77			
Joyce	RA-1127	145764	140041	186,484	0.57			
Parks Wells Total Water Produced				**16,264,870**	**49.92**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	1,007,000	3.09	0.21%
Trigg Wells	41,000	0.13	0.01%
RIAC Wells	26,111,000	80.13	5.54%
Six Mile Hill Wells	191,940,000	589.04	40.74%
South of Roswell Wells	235,720,000	723.40	50.04%
Park's Wells	16,264,870	49.92	3.45%
Combined Totals	**471,083,870**	**1,445.71**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	471,083,870	1,445.71
Park's Wells	16,264,870	49.92
Park's Meters	29,435,181	90.33
Golf Course Meters	2,642,609	8.11
Cemetery Meters	7,766,220	23.83
Water for Sale	**414,974,990**	**1,273.52**

	Gallons Produced
11/01/11 through 05/31/12	2,023,323,000
11/01/12 through 05/31/13	2,171,072,000
11/01/13 through 05/31/14	2,075,940,000
May 2012	433,589,000
May 2013	528,084,000
May 2014	454,819,000

City of Roswell
Monthly Water Production Report
August 01, 2014 through August 31, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	337731	321518	16,213,000	49.76	0	0	N/A
KW2	RA-2084-X2	228478	211350	17,128,000	52.56	179	171	8
KW3	RA-2084-X3	113785	113778	7,000	0.02	0	0	N/A
KW4	RA-2084-X4	848185	782315	65,870,000	202.15	181	162	19
KW5	RA-2009-S4	456079	423357	32,722,000	100.42	165	160	5
KW6	RA-2009-S3	168616	128477	40,139,000	123.18	147	137	10
Kerr WellsTotal Water Produced				**172,079,000**	**528.09**			
TW1	RA-2823	283537	283537	0	0.00	0	0	N/A
TW2	RA-2823S	297787	297752	35,000	0.11	0	0	N/A
Trigg Wells Total Water Produced				**35,000**	**0.11**			
RW1	RA-2009	2865	2823	42,000	0.13	130	120	10
RW3	RA-2025	576007	566872	9,135,000	28.03	130	120	10
RW4	RA-2009S	16761	16260	501,000	1.54	0	0	N/A
RW5	RA-2009-S2	5645	5275	370,000	1.14	0	0	N/A
RIAC Wells Total Water Produced				**10,048,000**	**30.84**			
SMW10	RA-4253	323777	323672	105,000	0.32	0	0	N/A
SMW11	RA-4255	357996	357873	123,000	0.38	188	180	8
SMW18	RA-4253S	373006	321643	51,363,000	157.63	0	0	N/A
Six Mile Hill Wells Total Water Produced				**51,591,000**	**158.33**			
SRW12	RA-681	18406	17442	964,000	2.96	0	0	N/A
SRW13	RA-1823	128417	122327	6,090,000	18.69	0	0	N/A
SRW15	RA-977C	28293	12468	15,825,000	48.57	107	104	3
SRW16	RA-98S2	1809409	1751681	57,728,000	177.16	121	114	7
SRW17	RA-98S3	1184987	1131684	53,303,000	163.58	0	0	N/A
South of Roswell Wells Total Water Produced				**133,910,000**	**410.96**			
Water System Wells Total Water Produced				**367,663,000**	**1,128.32**			
SRW4	RA-98S	35772	35771	1,000	0.00			
SRW8	RA-2167	2493687	2491003	2,684,000	8.24			
Dow	RA-339B	1626500	1623656	92,672	0.28			
Joyce	RA-1127	159044	153988	164,750	0.51			
Parks Wells Total Water Produced				**2,942,422**	**9.03**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	172,079,000	528.09	46.43%
Trigg Wells	35,000	0.11	0.01%
RIAC Wells	10,048,000	30.84	2.71%
Six Mile Hill Wells	51,591,000	158.33	13.92%
South of Roswell Wells	133,910,000	410.96	36.13%
Park's Wells	2,942,422	9.03	0.79%
Combined Totals	**370,605,422**	**1,137.35**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	370,605,422	1,137.35
Park's Wells	2,942,422	9.03
Park's Meters	35,514,654	108.99
Golf Course Meters	2,861,773	8.78
Cemetery Meters	4,282,840	13.14
Water for Sale	**325,003,733**	**997.40**

	Gallons Produced
11/01/11 through 08/31/12	3,741,120,000
11/01/12 through 08/31/13	3,663,147,000
11/01/13 through 08/31/14	3,466,412,000
August 2012	539,350,000
August 2013	475,703,000
August 2014	367,663,000

City of Roswell
Monthly Water Production Report
July 01, 2014 through July 31, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	321518	295613	25,905,000	79.50	0	0	N/A
KW2	RA-2084-X2	211350	204842	6,508,000	19.97	181	170	11
KW3	RA-2084-X3	113778	113773	5,000	0.02	0	0	N/A
KW4	RA-2084-X4	782315	726713	55,602,000	170.64	178	156	22
KW5	RA-2009-S4	423357	368710	54,647,000	167.71	162	155	7
KW6	RA-2009-S3	128477	106433	22,044,000	67.65	0	0	N/A
Kerr WellsTotal Water Produced				**164,711,000**	**505.48**			
TW1	RA-2823	283537	283537	0	0.00	0	0	N/A
TW2	RA-2823S	297752	297749	3,000	0.01	0	0	N/A
Trigg Wells Total Water Produced				**3,000**	**0.01**			
RW1	RA-2009	2823	2730	93,000	0.29	132	122	10
RW3	RA-2025	566872	538209	28,663,000	87.96	130	121	9
RW4	RA-2009S	16260	13149	3,111,000	9.55	0	0	N/A
RW5	RA-2009-S2	5275	4549	726,000	2.23	141	132	9
RIAC Wells Total Water Produced				**32,593,000**	**100.02**			
SMW10	RA-4253	323672	276196	47,476,000	145.70	0	0	N/A
SMW11	RA-4255	357873	304615	53,258,000	163.44	188	181	7
SMW18	RA-4253S	321643	277770	43,873,000	134.64	0	0	N/A
Six Mile Hill Wells Total Water Produced				**144,607,000**	**443.78**			
SRW12	RA-681	17442	13102	4,340,000	13.32	0	0	N/A
SRW13	RA-1823	122327	109750	12,577,000	38.60	0	0	N/A
SRW15	RA-977C	12468	0	12,468,000	38.26	114	107	7
SRW16	RA-98S2	1751681	1659673	92,008,000	282.36	121	114	7
SRW17	RA-98S3	1131684	1070780	60,904,000	186.91	0	0	N/A
South of Roswell Wells Total Water Produced				**182,297,000**	**559.45**			
Water System Wells Total Water Produced				**524,211,000**	**1,608.75**			
SRW4	RA-98S	35771	35051	720,000	2.21			
SRW8	RA-2167	2491003	2473171	17,832,000	54.72			
Dow	RA-339B	1623656	1613012	346,835	1.06			
Joyce	RA-1127	153988	148896	165,923	0.51			
Parks Wells Total Water Produced				**19,064,758**	**58.51**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	164,711,000	505.48	30.32%
Trigg Wells	3,000	0.01	0.00%
RIAC Wells	32,593,000	100.02	6.00%
Six Mile Hill Wells	144,607,000	443.78	26.62%
South of Roswell Wells	182,297,000	559.45	33.56%
Park's Wells	19,064,758	58.51	3.51%
Combined Totals	**543,275,758**	**1,667.26**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	543,275,758	1,667.26
Park's Wells	19,064,758	58.51
Park's Meters	39,320,652	120.67
Golf Course Meters	4,605,884	14.13
Cemetery Meters	9,924,990	30.46
Water for Sale	**470,359,474**	**1,443.48**

	Gallons Produced
11/01/11 through 07/31/12	3,201,770,000
11/01/12 through 07/31/13	3,187,444,000
11/01/13 through 07/31/14	3,098,749,000
July 2012	595,681,000
July 2013	455,889,000
July 2014	524,211,000

City of Roswell
Monthly Water Production Report
October 01, 2014 through October 31, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	346077	345837	240,000	0.74	0	0	N/A
KW2	RA-2084-X2	277361	244711	32,650,000	100.20	175	161	14
KW3	RA-2084-X3	136553	135719	834,000	2.56	0	0	N/A
KW4	RA-2084-X4	988255	917745	70,510,000	216.39	173	148	25
KW5	RA-2009-S4	572706	502316	70,390,000	216.02	153	147	6
KW6	RA-2009-S3	57	43	14,000	0.04	140	129	11
Kerr WellsTotal Water Produced				**174,638,000**	**535.95**			
TW1	RA-2823	293798	283616	10,182,000	31.25	290	274	16
TW2	RA-2823S	308057	297791	10,266,000	31.51	0	0	N/A
Trigg Wells Total Water Produced				**20,448,000**	**62.75**			
RW1	RA-2009	3301	3119	182,000	0.56	120	111	9
RW3	RA-2025	616738	602314	14,424,000	44.27	118	107	11
RW4	RA-2009S	17357	17322	35,000	0.11	0	0	N/A
RW5	RA-2009-S2	5953	5907	46,000	0.14	0	0	N/A
RIAC Wells Total Water Produced				**14,687,000**	**45.07**			
SMW10	RA-4253	323991	323832	159,000	0.49	0	0	N/A
SMW11	RA-4255	358221	358077	144,000	0.44	183	175	8
SMW18	RA-4253S	476319	424957	51,362,000	157.62	0	0	N/A
Six Mile Hill Wells Total Water Produced				**51,665,000**	**158.55**			
SRW12	RA-681	18621	18583	38,000	0.12	0	0	N/A
SRW13	RA-1823	129981	129635	346,000	1.06	0	0	N/A
SRW15	RA-977C	33327	33219	108,000	0.33	101	94	7
SRW16	RA-98S2	1889220	1857071	32,149,000	98.66	113	106	7
SRW17	RA-98S3	1208784	1206450	2,334,000	7.16	0	0	N/A
South of Roswell Wells Total Water Produced				**34,975,000**	**107.33**			
Water System Wells Total Water Produced				**296,413,000**	**909.66**			
SRW4	RA-98S	35776	35776	0	0.00			
SRW8	RA-2167	2499876	2495592	4,284,000	13.15			
Dow	RA-339B	1649673	1639790	322,038	0.99			
Joyce	RA-1127	165078	161879	104,239	0.32			
Parks Wells Total Water Produced				**4,710,277**	**14.46**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	174,638,000	535.95	58.00%
Trigg Wells	20,448,000	62.75	6.79%
RIAC Wells	14,687,000	45.07	4.88%
Six Mile Hill Wells	51,665,000	158.55	17.16%
South of Roswell Wells	34,975,000	107.33	11.61%
Park's Wells	4,710,277	14.46	1.56%
Combined Totals	**301,123,277**	**924.12**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	301,123,277	924.12
Park's Wells	4,710,277	14.46
Park's Meters	4,793,436	14.71
Golf Course Meters	1,993,869	6.12
Cemetery Meters	2,724,040	8.36
Water for Sale	**286,901,655**	**880.47**

	Gallons Produced
11/01/11 through 10/31/12	4,501,075,000
11/01/12 through 10/31/13	4,335,609,000
11/01/13 through 10/31/14	4,091,687,000
October 2012	351,482,000
October 2013	291,467,000
October 2014	296,413,000

City of Roswell
Monthly Water Production Report
September 01, 2014 through September 30, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	345837	337731	8,106,000	24.88	0	0	N/A
KW2	RA-2084-X2	244711	228478	16,233,000	49.82	178	166	12
KW3	RA-2084-X3	135719	113785	21,934,000	67.31	0	0	N/A
KW4	RA-2084-X4	917745	848185	69,560,000	213.47	174	149	25
KW5	RA-2009-S4	502316	456079	46,237,000	141.90	155	148	7
KW6	RA-2009-S3	180408	168616	11,792,000	36.19	145	132	13
Kerr WellsTotal Water Produced				**173,862,000**	**533.56**			
TW1	RA-2823	283616	283537	79,000	0.24	0	0	N/A
TW2	RA-2823S	297791	297787	4,000	0.01	0	0	N/A
Trigg Wells Total Water Produced				**83,000**	**0.25**			
RW1	RA-2009	3119	2865	254,000	0.78	122	113	9
RW3	RA-2025	602314	576007	26,307,000	80.73	120	110	10
RW4	RA-2009S	17322	16761	561,000	1.72	0	0	N/A
RW5	RA-2009-S2	5907	5645	262,000	0.80	0	0	N/A
RIAC Wells Total Water Produced				**27,384,000**	**84.04**			
SMW10	RA-4253	323832	323777	55,000	0.17	0	0	N/A
SMW11	RA-4255	358077	357996	81,000	0.25	0	0	N/A
SMW18	RA-4253S	424957	373006	51,951,000	159.43	0	0	N/A
Six Mile Hill Wells Total Water Produced				**52,087,000**	**159.85**			
SRW12	RA-681	18583	18406	177,000	0.54	0	0	N/A
SRW13	RA-1823	129635	128417	1,218,000	3.74	0	0	N/A
SRW15	RA-977C	33219	28293	4,926,000	15.12	101	96	5
SRW16	RA-98S2	1857071	1809409	47,662,000	146.27	115	109	6
SRW17	RA-98S3	1206450	1184987	21,463,000	65.87	0	0	N/A
South of Roswell Wells Total Water Produced				**75,446,000**	**231.54**			
Water System Wells Total Water Produced				**328,862,000**	**1,009.24**			
SRW4	RA-98S	35776	35772	4,000	0.01			
SRW8	RA-2167	2495592	2493687	1,905,000	5.85			
Dow	RA-339B	1639790	1626500	433,055	1.33			
Joyce	RA-1127	161879	159044	92,378	0.28			
Parks Wells Total Water Produced				**2,434,433**	**7.47**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	173,862,000	533.56	52.48%
Trigg Wells	83,000	0.25	0.03%
RIAC Wells	27,384,000	84.04	8.27%
Six Mile Hill Wells	52,087,000	159.85	15.72%
South of Roswell Wells	75,446,000	231.54	22.77%
Park's Wells	2,434,433	7.47	0.73%
Combined Totals	**331,296,433**	**1,016.71**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	331,296,433	1,016.71
Park's Wells	2,434,433	7.47
Park's Meters	10,609,356	32.56
Golf Course Meters	1,238,164	3.80
Cemetery Meters	1,611,980	4.95
Water for Sale	**315,402,500**	**967.94**

	Gallons Produced
11/01/11 through 09/30/12	4,149,593,000
11/01/12 through 09/30/13	4,044,142,000
11/01/13 through 09/30/14	3,795,274,000
September 2012	408,473,000
September 2013	380,995,000
September 2014	328,862,000

City of Roswell
Monthly Water Production Report
December 01, 2014 through December 31, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	348156	347547	609,000	1.87	0	0	N/A
KW2	RA-2084-X2	287030	285842	1,188,000	3.65	0	0	N/A
KW3	RA-2084-X3	148646	139558	9,088,000	27.89	0	0	N/A
KW4	RA-2084-X4	1076004	1052236	23,768,000	72.94	0	0	N/A
KW5	RA-2009-S4	582661	572765	9,896,000	30.37	0	0	N/A
KW6	RA-2009-S3	13731	87	13,644,000	41.87	0	0	N/A
Kerr WellsTotal Water Produced				**58,193,000**	**178.59**			
TW1	RA-2823	339701	337753	1,948,000	5.98	0	0	N/A
TW2	RA-2823S	353580	351648	1,932,000	5.93	0	0	N/A
Trigg Wells Total Water Produced				**3,880,000**	**11.91**			
RW1	RA-2009	3373	3337	36,000	0.11	110	105	5
RW3	RA-2025	638248	628990	9,258,000	28.41	113	101	12
RW4	RA-2009S	17490	17446	44,000	0.14	0	0	N/A
RW5	RA-2009-S2	6065	6015	50,000	0.15	0	0	N/A
RIAC Wells Total Water Produced				**9,388,000**	**28.81**			
SMW10	RA-4253	324241	324090	151,000	0.46	0	0	N/A
SMW11	RA-4255	358421	358297	124,000	0.38	0	0	N/A
SMW18	RA-4253S	578468	528268	50,200,000	154.06	0	0	N/A
Six Mile Hill Wells Total Water Produced				**50,475,000**	**154.90**			
SRW12	RA-681	18716	18663	53,000	0.16	0	0	N/A
SRW13	RA-1823	130455	130064	391,000	1.20	0	0	N/A
SRW15	RA-977C	34684	33423	1,261,000	3.87	99	90	9
SRW16	RA-98S2	1945864	1893053	52,811,000	162.07	108	100	8
SRW17	RA-98S3	1227341	1209294	18,047,000	55.38	0	0	N/A
South of Roswell Wells Total Water Produced				**72,563,000**	**222.69**			
Water System Wells Total Water Produced				**194,499,000**	**596.90**			
SRW4	RA-98S	35776	35776	0	0.00			
SRW8	RA-2167	2502350	2500099	2,251,000	6.91			
Dow	RA-339B	1658295	1658031	8,602	0.03			
Joyce	RA-1127	169141	167047	68,233	0.21			
Parks Wells Total Water Produced				**2,327,835**	**7.14**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	58,193,000	178.59	29.57%
Trigg Wells	3,880,000	11.91	1.97%
RIAC Wells	9,388,000	28.81	4.77%
Six Mile Hill Wells	50,475,000	154.90	25.64%
South of Roswell Wells	72,563,000	222.69	36.87%
Park's Wells	2,327,835	7.14	1.18%
Combined Totals	**196,826,835**	**604.04**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	196,826,835	604.04
Park's Wells	2,327,835	7.14
Park's Meters	908,875	2.79
Golf Course Meters	831,776	2.55
Cemetery Meters	349,840	1.07
Water for Sale	**192,408,509**	**590.48**

	Gallons Produced
11/01/12 through 12/31/12	455,207,000
11/01/13 through 12/31/13	424,211,000
11/01/14 through 12/31/14	428,198,000
December 2012	201,037,000
December 2013	179,838,000
December 2014	194,499,000

City of Roswell
Monthly Water Production Report
November 01, 2014 through November 30, 2014

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	347547	346077	1,470,000	4.51	0	0	N/A
KW2	RA-2084-X2	285842	277361	8,481,000	26.03	172	158	14
KW3	RA-2084-X3	139558	136553	3,005,000	9.22	0	0	N/A
KW4	RA-2084-X4	1052236	988255	63,981,000	196.35	170	145	25
KW5	RA-2009-S4	572765	572706	59,000	0.18	150	143	7
KW6	RA-2009-S3	87	57	30,000	0.09	150	140	10
Kerr WellsTotal Water Produced				**77,026,000**	**236.38**			
TW1	RA-2823	337753	293798	43,955,000	134.89	290	275	15
TW2	RA-2823S	351648	308057	43,591,000	133.78	0	0	N/A
Trigg Wells Total Water Produced				**87,546,000**	**268.67**			
RW1	RA-2009	3337	3301	36,000	0.11	125	110	15
RW3	RA-2025	628990	616738	12,252,000	37.60	119	106	13
RW4	RA-2009S	17446	17357	89,000	0.27	0	0	N/A
RW5	RA-2009-S2	6015	5953	62,000	0.19	0	0	N/A
RIAC Wells Total Water Produced				**12,439,000**	**38.17**			
SMW10	RA-4253	324090	323991	99,000	0.30	0	0	N/A
SMW11	RA-4255	358297	358221	76,000	0.23	185	177	8
SMW18	RA-4253S	528268	476319	51,949,000	159.43	0	0	N/A
Six Mile Hill Wells Total Water Produced				**52,124,000**	**159.96**			
SRW12	RA-681	18663	18621	42,000	0.13	0	0	N/A
SRW13	RA-1823	130064	129981	83,000	0.25	0	0	N/A
SRW15	RA-977C	33423	33327	96,000	0.29	100	92	8
SRW16	RA-98S2	1893053	1889220	3,833,000	11.76	118	111	7
SRW17	RA-98S3	1209294	1208784	510,000	1.57	0	0	N/A
South of Roswell Wells Total Water Produced				**4,564,000**	**14.01**			
Water System Wells Total Water Produced				**233,699,000**	**717.20**			
SRW4	RA-98S	35776	35776	0	0.00			
SRW8	RA-2167	2500099	2499876	223,000	0.68			
Dow	RA-339B	1658031	1649673	272,345	0.84			
Joyce	RA-1127	167047	165078	64,160	0.20			
Parks Wells Total Water Produced				**559,505**	**1.72**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	77,026,000	236.38	32.88%
Trigg Wells	87,546,000	268.67	37.37%
RIAC Wells	12,439,000	38.17	5.31%
Six Mile Hill Wells	52,124,000	159.96	22.25%
South of Roswell Wells	4,564,000	14.01	1.95%
Park's Wells	559,505	1.72	0.24%
Combined Totals	**234,258,505**	**718.92**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	234,258,505	718.92
Park's Wells	559,505	1.72
Park's Meters	3,864,544	11.86
Golf Course Meters	448,725	1.38
Cemetery Meters	232,880	0.71
Water for Sale	**229,152,851**	**703.25**

	Gallons Produced
11/01/12 through 11/30/12	254,170,000
11/01/13 through 11/30/13	244,373,000
11/01/14 through 11/30/14	233,699,000
November 2012	254,170,000
November 2013	244,373,000
November 2014	233,699,000

City of Roswell
Monthly Water Production Report
February 01, 2015 through February 28, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	348156	348156	0	0.00	0	0	N/A
KW2	RA-2084-X2	287030	287030	0	0.00	0	0	N/A
KW3	RA-2084-X3	148646	148646	0	0.00	0	0	N/A
KW4	RA-2084-X4	1076004	1076004	0	0.00	0	0	N/A
KW5	RA-2009-S4	582661	582661	0	0.00	0	0	N/A
KW6	RA-2009-S3	13731	13731	0	0.00	0	0	N/A
Kerr WellsTotal Water Produced				**0**	**0.00**			
TW1	RA-2823	339701	339701	0	0.00	0	0	N/A
TW2	RA-2823S	353580	353580	0	0.00	0	0	N/A
Trigg Wells Total Water Produced				**0**	**0.00**			
RW1	RA-2009	3424	3399	25,000	0.08	106	100	6
RW3	RA-2025	659247	649482	9,765,000	29.97	0	0	N/A
RW4	RA-2009S	17945	17722	223,000	0.68	0	0	N/A
RW5	RA-2009-S2	6244	6199	45,000	0.14	214	206	8
RIAC Wells Total Water Produced				**10,058,000**	**30.87**			
SMW10	RA-4253	324434	324339	95,000	0.29	0	0	N/A
SMW11	RA-4255	358421	358421	0	0.00	0	0	N/A
SMW18	RA-4253S	642866	628970	13,896,000	42.65	0	0	N/A
Six Mile Hill Wells Total Water Produced				**13,991,000**	**42.94**			
SRW12	RA-681	18798	18755	43,000	0.13	0	0	N/A
SRW13	RA-1823	130789	130714	75,000	0.23	0	0	N/A
SRW15	RA-977C	65761	65761	0	0.00	0	0	N/A
SRW16	RA-98S2	2141240	2044392	96,848,000	297.22	0	0	N/A
SRW17	RA-98S3	1314623	1262368	52,255,000	160.37	0	0	N/A
South of Roswell Wells Total Water Produced				**149,221,000**	**457.94**			
Water System Wells Total Water Produced				**173,270,000**	**531.75**			
SRW4	RA-98S	35776	35776	0	0.00			
SRW8	RA-2167	2503178	2502350	828,000	2.54			
Dow	RA-339B	1658763	1658295	15,250	0.05			
Joyce	RA-1127	172258	170872	45,163	0.14			
Parks Wells Total Water Produced				**888,413**	**2.73**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	0	0.00	0.00%
Trigg Wells	0	0.00	0.00%
RIAC Wells	10,058,000	30.87	5.78%
Six Mile Hill Wells	13,991,000	42.94	8.03%
South of Roswell Wells	149,221,000	457.94	85.68%
Park's Wells	888,413	2.73	0.51%
Combined Totals	**174,158,413**	**534.47**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	174,158,413	534.47
Park's Wells	888,413	2.73
Park's Meters	1,343,787	4.12
Golf Course Meters	357,619	1.10
Cemetery Meters	597,180	1.83
Water for Sale	**170,971,414**	**524.69**

	Gallons Produced
11/01/12 through 02/28/13	881,382,000
11/01/13 through 02/28/14	868,995,000
11/01/14 through 02/28/15	824,637,000
February 2013	210,746,000
February 2014	220,707,000
February 2015	173,270,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
January 01, 2015 through January 31, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	348156	348156	0	0.00	0	0	N/A
KW2	RA-2084-X2	287030	287030	0	0.00	0	0	N/A
KW3	RA-2084-X3	148646	148646	0	0.00	0	0	N/A
KW4	RA-2084-X4	1076004	1076004	0	0.00	0	0	N/A
KW5	RA-2009-S4	582661	582661	0	0.00	0	0	N/A
KW6	RA-2009-S3	13731	13731	0	0.00	0	0	N/A
Kerr WellsTotal Water Produced				**0**	**0.00**			
TW1	RA-2823	339701	339701	0	0.00	0	0	N/A
TW2	RA-2823S	353580	353580	0	0.00	0	0	N/A
Trigg Wells Total Water Produced				**0**	**0.00**			
RW1	RA-2009	3399	3373	26,000	0.08	108	100	8
RW3	RA-2025	649482	638248	11,234,000	34.48	111	100	11
RW4	RA-2009S	17722	17490	232,000	0.71	0	0	N/A
RW5	RA-2009-S2	6199	6065	134,000	0.41	212	209	3
RIAC Wells Total Water Produced				**11,626,000**	**35.68**			
SMW10	RA-4253	324339	324241	98,000	0.30	0	0	N/A
SMW11	RA-4255	358421	358421	0	0.00	0	0	N/A
SMW18	RA-4253S	628970	578468	50,502,000	154.99	0	0	N/A
Six Mile Hill Wells Total Water Produced				**50,600,000**	**155.29**			
SRW12	RA-681	18755	18716	39,000	0.12	0	0	N/A
SRW13	RA-1823	130714	130455	259,000	0.79	0	0	N/A
SRW15	RA-977C	65761	34684	31,077,000	95.37	93	87	6
SRW16	RA-98S2	2044392	1945864	98,528,000	302.37	0	0	N/A
SRW17	RA-98S3	1262368	1227341	35,027,000	107.49	0	0	N/A
South of Roswell Wells Total Water Produced				**164,930,000**	**506.15**			
Water System Wells Total Water Produced				**227,156,000**	**697.12**			
SRW4	RA-98S	35776	35776	0	0.00			
SRW8	RA-2167	2502350	2502350	0	0.00			
Dow	RA-339B	1658295	1658295	0	0.00			
Joyce	RA-1127	170872	169141	56,405	0.17			
Parks Wells Total Water Produced				**56,405**	**0.17**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	0	0.00	0.00%
Trigg Wells	0	0.00	0.00%
RIAC Wells	11,626,000	35.68	5.12%
Six Mile Hill Wells	50,600,000	155.29	22.27%
South of Roswell Wells	164,930,000	506.15	72.59%
Park's Wells	56,405	0.17	0.02%
Combined Totals	**227,212,405**	**697.29**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	227,212,405	697.29
Park's Wells	56,405	0.17
Park's Meters	678,596	2.08
Golf Course Meters	624,804	1.92
Cemetery Meters	125,360	0.38
Water for Sale	**225,727,240**	**692.73**

	Gallons Produced
11/01/12 through 01/31/13	670,636,000
11/01/13 through 01/31/14	648,288,000
11/01/14 through 01/31/15	651,367,000
January 2013	215,429,000
January 2014	224,077,000
January 2015	227,156,000

Produced by:
Roger Buckley

City of Roswell
Monthly Water Production Report
April 01, 2015 through April 30, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	348195	348179	16,000	0.05	0	0	N/A
KW2	RA-2084-X2	287065	287051	14,000	0.04	170	160	10
KW3	RA-2084-X3	148792	148779	13,000	0.04	0	0	N/A
KW4	RA-2084-X4	1077200	1076989	211,000	0.65	165	143	22
KW5	RA-2009-S4	582743	582686	57,000	0.17	149	142	7
KW6	RA-2009-S3	14054	14028	26,000	0.08	135	125	10
Kerr WellsTotal Water Produced				**337,000**	**1.03**			
TW1	RA-2823	339802	339788	14,000	0.04	274	262	12
TW2	RA-2823S	353714	353680	34,000	0.10	0	0	N/A
Trigg Wells Total Water Produced				**48,000**	**0.15**			
RW1	RA-2009	3473	3452	21,000	0.06	111	108	3
RW3	RA-2025	685550	671530	14,020,000	43.03	117	106	11
RW4	RA-2009S	18375	18155	220,000	0.68	0	0	N/A
RW5	RA-2009-S2	6422	6309	113,000	0.35	0	0	N/A
RIAC Wells Total Water Produced				**14,374,000**	**44.11**			
SMW10	RA-4253	324734	324606	128,000	0.39	0	0	N/A
SMW11	RA-4255	358523	358421	102,000	0.31	182	173	9
SMW18	RA-4253S	748149	679339	68,810,000	211.17	179	174	5
Six Mile Hill Wells Total Water Produced				**69,040,000**	**211.88**			
SRW12	RA-681	26005	21784	4,221,000	12.95	0	0	N/A
SRW13	RA-1823	162576	144412	18,164,000	55.74	0	0	N/A
SRW15	RA-977C	157390	116740	40,650,000	124.75	100	96	4
SRW16	RA-98S2	2338763	2233028	105,735,000	324.49	112	109	3
SRW17	RA-98S3	1401154	1318771	82,383,000	252.82	0	0	N/A
South of Roswell Wells Total Water Produced				**251,153,000**	**770.76**			
Water System Wells Total Water Produced				**334,952,000**	**1,027.93**			
SRW4	RA-98S	35776	35776	0	0.00			
SRW8	RA-2167	2515758	2504945	10,813,000	33.18			
Dow	RA-339B	1663138	1660057	100,394	0.31			
Joyce	RA-1127	176467	173862	84,884	0.26			
Parks Wells Total Water Produced				**10,998,278**	**33.75**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	337,000	1.03	0.10%
Trigg Wells	48,000	0.15	0.01%
RIAC Wells	14,374,000	44.11	4.15%
Six Mile Hill Wells	69,040,000	211.88	19.96%
South of Roswell Wells	251,153,000	770.76	72.60%
Park's Wells	10,998,278	33.75	3.18%
Combined Totals	**345,950,278**	**1,061.69**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	345,950,278	1,061.69
Park's Wells	10,998,278	33.75
Park's Meters	6,797,191	20.86
Golf Course Meters	1,739,698	5.34
Cemetery Meters	3,193,940	9.80
Water for Sale	**323,221,171**	**991.93**

	Gallons Produced
11/01/12 through 04/30/13	1,642,988,000
11/01/13 through 04/30/14	1,621,121,000
11/01/14 through 04/30/15	1,374,015,000
April 2013	416,587,000
April 2014	416,346,000
April 2015	334,952,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
March 01, 2015 through March 31, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	348179	348156	23,000	0.07	0	0	N/A
KW2	RA-2084-X2	287051	287030	21,000	0.06	168	156	12
KW3	RA-2084-X3	148779	148646	133,000	0.41	0	0	N/A
KW4	RA-2084-X4	1076989	1076004	985,000	3.02	164	142	22
KW5	RA-2009-S4	582686	582661	25,000	0.08	147	140	7
KW6	RA-2009-S3	14028	13731	297,000	0.91	135	123	12
Kerr WellsTotal Water Produced				**1,484,000**	**4.55**			
TW1	RA-2823	339788	339701	87,000	0.27	279	265	14
TW2	RA-2823S	353680	353580	100,000	0.31	0	0	N/A
Trigg Wells Total Water Produced				**187,000**	**0.57**			
RW1	RA-2009	3452	3424	28,000	0.09	125	119	6
RW3	RA-2025	671530	659247	12,283,000	37.70	117	107	10
RW4	RA-2009S	18155	17945	210,000	0.64	0	0	N/A
RW5	RA-2009-S2	6309	6244	65,000	0.20	134	106	28
RIAC Wells Total Water Produced				**12,586,000**	**38.63**			
SMW10	RA-4253	324606	324434	172,000	0.53	0	0	N/A
SMW11	RA-4255	358421	358421	0	0.00	0	0	N/A
SMW18	RA-4253S	679339	642866	36,473,000	111.93	0	0	N/A
Six Mile Hill Wells Total Water Produced				**36,645,000**	**112.46**			
SRW12	RA-681	21784	18798	2,986,000	9.16	0	0	N/A
SRW13	RA-1823	144412	130789	13,623,000	41.81	128	122	6
SRW15	RA-977C	116740	65761	50,979,000	156.45	96	89	7
SRW16	RA-98S2	2233028	2141240	91,788,000	281.69	110	102	8
SRW17	RA-98S3	1318771	1314623	4,148,000	12.73	0	0	N/A
South of Roswell Wells Total Water Produced				**163,524,000**	**501.84**			
Water System Wells Total Water Produced				**214,426,000**	**658.05**			
SRW4	RA-98S	35776	35776	0	0.00			
SRW8	RA-2167	2504945	2503178	1,767,000	5.42			
Dow	RA-339B	1660057	1658763	42,165	0.13			
Joyce	RA-1127	173862	172258	52,266	0.16			
Parks Wells Total Water Produced				**1,861,431**	**5.71**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	1,484,000	4.55	0.69%
Trigg Wells	187,000	0.57	0.09%
RIAC Wells	12,586,000	38.63	5.82%
Six Mile Hill Wells	36,645,000	112.46	16.94%
South of Roswell Wells	163,524,000	501.84	75.60%
Park's Wells	1,861,431	5.71	0.86%
Combined Totals	**216,287,431**	**663.76**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	216,287,431	663.76
Park's Wells	1,861,431	5.71
Park's Meters	2,859,113	8.77
Golf Course Meters	527,191	1.62
Cemetery Meters	373,810	1.15
Water for Sale	**210,665,886**	**646.51**

	Gallons Produced
11/01/12 through 03/31/13	1,226,401,000
11/01/13 through 03/31/14	1,204,775,000
11/01/14 through 03/31/15	1,039,063,000
March 2013	345,019,000
March 2014	335,780,000
March 2015	214,426,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
June 01, 2015 through June 30, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	384606	358747	25,859,000	79.36	0	0	N/A
KW2	RA-2084-X2	299386	287449	11,937,000	36.63	176	165	11
KW3	RA-2084-X3	151050	151050	0	0.00	0	0	N/A
KW4	RA-2084-X4	1155202	1094681	60,521,000	185.73	172	149	23
KW5	RA-2009-S4	624795	596108	28,687,000	88.04	152	146	6
KW6	RA-2009-S3	61332	22209	39,123,000	120.06	140	129	11
Kerr WellsTotal Water Produced				**166,127,000**	**509.83**			
TW1	RA-2823	341236	340259	977,000	3.00	285	270	15
TW2	RA-2823S	355183	354183	1,000,000	3.07	0	0	N/A
Trigg Wells Total Water Produced				**1,977,000**	**6.07**			
RW1	RA-2009	3507	3499	8,000	0.02	0	0	N/A
RW3	RA-2025	719241	701845	17,396,000	53.39	125	115	10
RW4	RA-2009S	18857	18408	449,000	1.38	0	0	N/A
RW5	RA-2009-S2	6662	6473	189,000	0.58	0	0	N/A
RIAC Wells Total Water Produced				**18,042,000**	**55.37**			
SMW10	RA-4253	324982	324851	131,000	0.40	0	0	N/A
SMW11	RA-4255	358794	358655	139,000	0.43	182	175	7
SMW18	RA-4253S	846114	801843	44,271,000	135.86	0	0	N/A
Six Mile Hill Wells Total Water Produced				**44,541,000**	**136.69**			
SRW12	RA-681	27713	27394	319,000	0.98	0	0	N/A
SRW13	RA-1823	176259	173298	2,961,000	9.09	0	0	N/A
SRW15	RA-977C	199201	190047	9,154,000	28.09	101	95	6
SRW16	RA-98S2	2526033	2436697	89,336,000	274.16	114	106	8
SRW17	RA-98S3	1517615	1482534	35,081,000	107.66	0	0	N/A
South of Roswell Wells Total Water Produced				**136,851,000**	**419.98**			
Water System Wells Total Water Produced				**367,538,000**	**1,127.94**			
SRW4	RA-98S	37777	36356	1,421,000	4.36			
SRW8	RA-2167	2534512	2522644	11,868,000	36.42			
Dow	RA-339B	1694274	1680345	453,876	1.39			
Joyce	RA-1127	184037	179885	135,293	0.42			
Parks Wells Total Water Produced				**13,878,169**	**42.59**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	166,127,000	509.83	43.56%
Trigg Wells	1,977,000	6.07	0.52%
RIAC Wells	18,042,000	55.37	4.73%
Six Mile Hill Wells	44,541,000	136.69	11.68%
South of Roswell Wells	136,851,000	419.98	35.88%
Park's Wells	13,878,169	42.59	3.64%
Combined Totals	**381,416,169**	**1,170.53**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	381,416,169	1,170.53
Park's Wells	13,878,169	42.59
Park's Meters	29,186,727	89.57
Golf Course Meters	2,514,402	7.72
Cemetery Meters	6,196,290	19.02
Water for Sale	**329,640,581**	**1,011.63**

	Gallons Produced
11/01/12 through 06/30/13	2,731,555,000
11/01/13 through 06/30/14	2,574,538,000
11/01/14 through 06/30/15	2,089,104,000
June 2013	560,483,000
June 2014	498,598,000
June 2015	367,538,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
May 01, 2015 through May 31, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	358747	348195	10,552,000	32.38	0	0	N/A
KW2	RA-2084-X2	287449	287065	384,000	1.18	170	160	10
KW3	RA-2084-X3	151050	148792	2,258,000	6.93	0	0	N/A
KW4	RA-2084-X4	1094681	1077200	17,481,000	53.65	169	145	24
KW5	RA-2009-S4	596108	582743	13,365,000	41.02	150	144	6
KW6	RA-2009-S3	22209	14054	8,155,000	25.03	139	125	14
Kerr WellsTotal Water Produced				**52,195,000**	**160.18**			
TW1	RA-2823	340259	339802	457,000	1.40	278	267	11
TW2	RA-2823S	354183	353714	469,000	1.44	0	0	N/A
Trigg Wells Total Water Produced				**926,000**	**2.84**			
RW1	RA-2009	3499	3473	26,000	0.08	110	108	2
RW3	RA-2025	701845	685550	16,295,000	50.01	117	106	11
RW4	RA-2009S	18408	18375	33,000	0.10	0	0	N/A
RW5	RA-2009-S2	6473	6422	51,000	0.16	0	0	N/A
RIAC Wells Total Water Produced				**16,405,000**	**50.35**			
SMW10	RA-4253	324851	324734	117,000	0.36	0	0	N/A
SMW11	RA-4255	358655	358523	132,000	0.41	182	174	8
SMW18	RA-4253S	801843	748149	53,694,000	164.78	179	175	4
Six Mile Hill Wells Total Water Produced				**53,943,000**	**165.55**			
SRW12	RA-681	27394	26005	1,389,000	4.26	0	0	N/A
SRW13	RA-1823	173298	162576	10,722,000	32.90	0	0	N/A
SRW15	RA-977C	190047	157390	32,657,000	100.22	98	92	6
SRW16	RA-98S2	2436697	2338763	97,934,000	300.55	111	105	6
SRW17	RA-98S3	1482534	1401154	81,380,000	249.75	0	0	N/A
South of Roswell Wells Total Water Produced				**224,082,000**	**687.68**			
Water System Wells Total Water Produced				**347,551,000**	**1,066.60**			
SRW4	RA-98S	36356	35776	580,000	1.78			
SRW8	RA-2167	2522644	2515758	6,886,000	21.13			
Dow	RA-339B	1680345	1663138	560,690	1.72			
Joyce	RA-1127	179885	176467	111,376	0.34			
Parks Wells Total Water Produced				**8,138,066**	**24.97**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	52,195,000	160.18	14.67%
Trigg Wells	926,000	2.84	0.26%
RIAC Wells	16,405,000	50.35	4.61%
Six Mile Hill Wells	53,943,000	165.55	15.17%
South of Roswell Wells	224,082,000	687.68	63.00%
Park's Wells	8,138,066	24.97	2.29%
Combined Totals	**355,689,066**	**1,091.57**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	355,689,066	1,091.57
Park's Wells	8,138,066	24.97
Park's Meters	21,513,718	66.02
Golf Course Meters	1,110,780	3.41
Cemetery Meters	3,821,520	11.73
Water for Sale	**321,104,982**	**985.44**

	Gallons Produced
11/01/12 through 05/31/13	2,171,072,000
11/01/13 through 05/31/14	2,075,940,000
11/01/14 through 05/31/15	1,721,566,000
May 2013	528,084,000
May 2014	454,819,000
May 2015	347,551,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
August 01, 2015 through August 31, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	477578	404069	73,509,000	225.59	0	0	N/A
KW2	RA-2084-X2	325574	325574	0	0.00	0	0	N/A
KW3	RA-2084-X3	151059	151059	0	0.00	0	0	N/A
KW4	RA-2084-X4	1292738	1223194	69,544,000	213.42	163	141	22
KW5	RA-2009-S4	704494	635234	69,260,000	212.55	152	145	7
KW6	RA-2009-S3	123162	79910	43,252,000	132.74	134	122	12
Kerr WellsTotal Water Produced				**255,565,000**	**784.30**			
TW1	RA-2823	393270	383079	10,191,000	31.28	278	264	14
TW2	RA-2823S	405983	395876	10,107,000	31.02	0	0	N/A
Trigg Wells Total Water Produced				**20,298,000**	**62.29**			
RW1	RA-2009	3989	3888	101,000	0.31	0	0	N/A
RW3	RA-2025	763057	734607	28,450,000	87.31	129	117	12
RW4	RA-2009S	21271	19766	1,505,000	4.62	0	0	N/A
RW5	RA-2009-S2	17088	16399	689,000	2.11	0	0	N/A
RIAC Wells Total Water Produced				**30,745,000**	**94.35**			
SMW10	RA-4253	326137	325521	616,000	1.89	0	0	N/A
SMW11	RA-4255	364429	361616	2,813,000	8.63	185	180	5
SMW18	RA-4253S	947445	897448	49,997,000	153.44	180	178	2
Six Mile Hill Wells Total Water Produced				**53,426,000**	**163.96**			
SRW12	RA-681	28214	28136	78,000	0.24	0	0	N/A
SRW13	RA-1823	180410	179926	484,000	1.49	0	0	N/A
SRW15	RA-977C	225376	217151	8,225,000	25.24	105	102	3
SRW16	RA-98S2	2715489	2627617	87,872,000	269.67	114	112	2
SRW17	RA-98S3	1617538	1578645	38,893,000	119.36	0	0	N/A
South of Roswell Wells Total Water Produced				**135,552,000**	**416.00**			
Water System Wells Total Water Produced				**495,586,000**	**1,520.90**			
SRW4	RA-98S	39061	38222	839,000	2.57			
SRW8	RA-2167	2568648	2553759	14,889,000	45.69			
Dow	RA-339B	1738834	1718222	671,642	2.06			
Joyce	RA-1127	196547	190950	182,378	0.56			
Parks Wells Total Water Produced				**16,582,020**	**50.89**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	255,565,000	784.30	49.90%
Trigg Wells	20,298,000	62.29	3.96%
RIAC Wells	30,745,000	94.35	6.00%
Six Mile Hill Wells	53,426,000	163.96	10.43%
South of Roswell Wells	135,552,000	416.00	26.47%
Park's Wells	16,582,020	50.89	3.24%
Combined Totals	**512,168,020**	**1,571.79**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	512,168,020	1,571.79
Park's Wells	16,582,020	50.89
Park's Meters	36,317,244	111.45
Golf Course Meters	5,221,190	16.02
Cemetery Meters	7,308,040	22.43
Water for Sale	**446,739,526**	**1,371.00**

	Gallons Produced
11/01/12 through 08/31/13	3,663,147,000
11/01/13 through 08/31/14	3,466,412,000
11/01/14 through 08/31/15	3,075,637,000
August 2013	475,703,000
August 2014	367,663,000
August 2015	495,586,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
July 01, 2015 through July 31, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	404069	384606	19,463,000	59.73	0	0	N/A
KW2	RA-2084-X2	325574	299386	26,188,000	80.37	0	0	N/A
KW3	RA-2084-X3	151059	151050	9,000	0.03	0	0	N/A
KW4	RA-2084-X4	1223194	1155202	67,992,000	208.66	185	150	35
KW5	RA-2009-S4	635234	624795	10,439,000	32.04	158	149	9
KW6	RA-2009-S3	79910	61332	18,578,000	57.01	0	0	N/A
Kerr WellsTotal Water Produced				**142,669,000**	**437.84**			
TW1	RA-2823	383079	341236	41,843,000	128.41	280	269	11
TW2	RA-2823S	395876	355183	40,693,000	124.88	0	0	N/A
Trigg Wells Total Water Produced				**82,536,000**	**253.29**			
RW1	RA-2009	3888	3507	381,000	1.17	0	0	N/A
RW3	RA-2025	734607	719241	15,366,000	47.16	130	121	9
RW4	RA-2009S	19766	18857	909,000	2.79	0	0	N/A
RW5	RA-2009-S2	16399	6662	9,737,000	29.88	0	0	N/A
RIAC Wells Total Water Produced				**26,393,000**	**81.00**			
SMW10	RA-4253	325521	324982	539,000	1.65	0	0	N/A
SMW11	RA-4255	361616	358794	2,822,000	8.66	185	176	9
SMW18	RA-4253S	897448	846114	51,334,000	157.54	179	175	4
Six Mile Hill Wells Total Water Produced				**54,695,000**	**167.85**			
SRW12	RA-681	28136	27713	423,000	1.30	0	0	N/A
SRW13	RA-1823	179926	176259	3,667,000	11.25	0	0	N/A
SRW15	RA-977C	217151	199201	17,950,000	55.09	110	105	5
SRW16	RA-98S2	2627617	2526033	101,584,000	311.75	119	111	8
SRW17	RA-98S3	1578645	1517615	61,030,000	187.29	0	0	N/A
South of Roswell Wells Total Water Produced				**184,654,000**	**566.68**			
Water System Wells Total Water Produced				**490,947,000**	**1,506.67**			
SRW4	RA-98S	38222	37777	445,000	1.37			
SRW8	RA-2167	2553759	2534512	19,247,000	59.07			
Dow	RA-339B	1718222	1694274	780,346	2.39			
Joyce	RA-1127	190950	184037	225,260	0.69			
Parks Wells Total Water Produced				**20,697,606**	**63.52**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	142,669,000	437.84	27.88%
Trigg Wells	82,536,000	253.29	16.13%
RIAC Wells	26,393,000	81.00	5.16%
Six Mile Hill Wells	54,695,000	167.85	10.69%
South of Roswell Wells	184,654,000	566.68	36.09%
Park's Wells	20,697,606	63.52	4.05%
Combined Totals	**511,644,606**	**1,570.18**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	511,644,606	1,570.18
Park's Wells	20,697,606	63.52
Park's Meters	39,039,066	119.81
Golf Course Meters	3,739,178	11.48
Cemetery Meters	9,239,610	28.36
Water for Sale	**438,929,146**	**1,347.03**

	Gallons Produced
11/01/12 through 07/31/13	3,187,444,000
11/01/13 through 07/31/14	3,098,749,000
11/01/14 through 07/31/15	2,580,051,000
July 2013	455,889,000
July 2014	524,211,000
July 2015	490,947,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
October 01, 2015 through October 31, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	519359	505306	14,053,000	43.13	0	0	N/A
KW2	RA-2084-X2	363473	325755	37,718,000	115.75	174	164	10
KW3	RA-2084-X3	172264	171427	837,000	2.57	0	0	N/A
KW4	RA-2084-X4	1415595	1359322	56,273,000	172.70	171	145	26
KW5	RA-2009-S4	732559	721779	10,780,000	33.08	0	0	N/A
KW6	RA-2009-S3	155744	154040	1,704,000	5.23	0	0	N/A
Kerr WellsTotal Water Produced				**121,365,000**	**372.46**			
TW1	RA-2823	404668	402268	2,400,000	7.37	282	271	11
TW2	RA-2823S	417002	414671	2,331,000	7.15	0	0	N/A
Trigg Wells Total Water Produced				**4,731,000**	**14.52**			
RW1	RA-2009	4280	4136	144,000	0.44	0	0	N/A
RW3	RA-2025	799504	785480	14,024,000	43.04	116	107	9
RW4	RA-2009S	22657	22491	166,000	0.51	0	0	N/A
RW5	RA-2009-S2	17719	17589	130,000	0.40	0	0	N/A
RIAC Wells Total Water Produced				**14,464,000**	**44.39**			
SMW10	RA-4253	326426	326307	119,000	0.37	0	0	N/A
SMW11	RA-4255	366769	366440	329,000	1.01	182	175	7
SMW18	RA-4253S	1035379	989636	45,743,000	140.38	0	0	N/A
Six Mile Hill Wells Total Water Produced				**46,191,000**	**141.76**			
SRW12	RA-681	29497	28323	1,174,000	3.60	0	0	N/A
SRW13	RA-1823	183208	180662	2,546,000	7.81	0	0	N/A
SRW15	RA-977C	235541	232108	3,433,000	10.54	98	94	4
SRW16	RA-98S2	2866036	2809126	56,910,000	174.65	113	105	8
SRW17	RA-98S3	1677438	1663292	14,146,000	43.41	0	0	N/A
South of Roswell Wells Total Water Produced				**78,209,000**	**240.02**			
Water System Wells Total Water Produced				**264,960,000**	**813.13**			
SRW4	RA-98S	39131	39131	0	0.00			
SRW8	RA-2167	2584265	2581088	3,177,000	9.75			
Dow	RA-339B	1750425	1747776	86,318	0.26			
Joyce	RA-1127	201073	200781	9,515	0.03			
Parks Wells Total Water Produced				**3,272,832**	**10.04**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	121,365,000	372.46	45.25%
Trigg Wells	4,731,000	14.52	1.76%
RIAC Wells	14,464,000	44.39	5.39%
Six Mile Hill Wells	46,191,000	141.76	17.22%
South of Roswell Wells	78,209,000	240.02	29.16%
Park's Wells	3,272,832	10.04	1.22%
Combined Totals	**268,232,832**	**823.18**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	268,232,832	823.18
Park's Wells	3,272,832	10.04
Park's Meters	9,962,848	30.57
Golf Course Meters	838,358	2.57
Cemetery Meters	1,470,210	4.51
Water for Sale	**252,688,584**	**775.48**

	Gallons Produced
11/01/12 through 10/31/13	4,335,609,000
11/01/13 through 10/31/14	4,091,687,000
11/01/14 through 10/31/15	3,736,454,000
October 2013	291,467,000
October 2014	296,413,000
October 2015	264,960,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
September 01, 2015 through September 30, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	505306	477578	27,728,000	85.09	0	0	N/A
KW2	RA-2084-X2	325755	325574	181,000	0.56	178	166	12
KW3	RA-2084-X3	171427	151059	20,368,000	62.51	0	0	N/A
KW4	RA-2084-X4	1359322	1292738	66,584,000	204.34	174	153	21
KW5	RA-2009-S4	721779	704494	17,285,000	53.05	155	150	5
KW6	RA-2009-S3	154040	123162	30,878,000	94.76	144	132	12
Kerr WellsTotal Water Produced				**163,024,000**	**500.30**			
TW1	RA-2823	402268	393270	8,998,000	27.61	282	268	14
TW2	RA-2823S	414671	405983	8,688,000	26.66	0	0	N/A
Trigg Wells Total Water Produced				**17,686,000**	**54.28**			
RW1	RA-2009	4136	3989	147,000	0.45	0	0	N/A
RW3	RA-2025	785480	763057	22,423,000	68.81	129	114	15
RW4	RA-2009S	22491	21271	1,220,000	3.74	0	0	N/A
RW5	RA-2009-S2	17589	17088	501,000	1.54	0	0	N/A
RIAC Wells Total Water Produced				**24,291,000**	**74.55**			
SMW10	RA-4253	326307	326137	170,000	0.52	0	0	N/A
SMW11	RA-4255	366440	364429	2,011,000	6.17	199	177	22
SMW18	RA-4253S	989636	947445	42,191,000	129.48	180	177	3
Six Mile Hill Wells Total Water Produced				**44,372,000**	**136.17**			
SRW12	RA-681	28323	28214	109,000	0.33	0	0	N/A
SRW13	RA-1823	180662	180410	252,000	0.77	0	0	N/A
SRW15	RA-977C	232108	225376	6,732,000	20.66	112	101	11
SRW16	RA-98S2	2809126	2715489	93,637,000	287.36	115	109	6
SRW17	RA-98S3	1663292	1617538	45,754,000	140.41	0	0	N/A
South of Roswell Wells Total Water Produced				**146,484,000**	**449.54**			
Water System Wells Total Water Produced				**395,857,000**	**1,214.84**			
SRW4	RA-98S	39131	39061	70,000	0.21			
SRW8	RA-2167	2581088	2568648	12,440,000	38.18			
Dow	RA-339B	1747776	1738834	291,375	0.89			
Joyce	RA-1127	200781	196547	137,965	0.42			
Parks Wells Total Water Produced				**12,939,340**	**39.71**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	163,024,000	500.30	39.88%
Trigg Wells	17,686,000	54.28	4.33%
RIAC Wells	24,291,000	74.55	5.94%
Six Mile Hill Wells	44,372,000	136.17	10.85%
South of Roswell Wells	146,484,000	449.54	35.83%
Park's Wells	12,939,340	39.71	3.17%
Combined Totals	**408,796,340**	**1,254.55**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	408,796,340	1,254.55
Park's Wells	12,939,340	39.71
Park's Meters	36,591,265	112.29
Golf Course Meters	2,189,247	6.72
Cemetery Meters	7,461,170	22.90
Water for Sale	**349,615,318**	**1,072.93**

	Gallons Produced
11/01/12 through 09/30/13	4,044,142,000
11/01/13 through 09/30/14	3,795,274,000
11/01/14 through 09/30/15	3,471,494,000
September 2013	380,995,000
September 2014	328,862,000
September 2015	395,857,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
December 01, 2015 through December 31, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	574868	574868	0	0.00	0	0	N/A
KW2	RA-2084-X2	373151	373151	0	0.00	0	0	N/A
KW3	RA-2084-X3	172338	172338	0	0.00	0	0	N/A
KW4	RA-2084-X4	1485193	1485193	0	0.00	0	0	N/A
KW5	RA-2009-S4	732559	732559	0	0.00	0	0	N/A
KW6	RA-2009-S3	155744	155744	0	0.00	0	0	N/A
Kerr WellsTotal Water Produced				**0**	**0.00**			
TW1	RA-2823	404933	404933	0	0.00	0	0	N/A
TW2	RA-2823S	417359	417359	0	0.00	0	0	N/A
Trigg Wells Total Water Produced				**0**	**0.00**			
RW1	RA-2009	4454	4368	86,000	0.26	0	0	N/A
RW3	RA-2025	822053	809813	12,240,000	37.56	115	105	10
RW4	RA-2009S	23763	23662	101,000	0.31	0	0	N/A
RW5	RA-2009-S2	17853	17780	73,000	0.22	0	0	N/A
RIAC Wells Total Water Produced				**12,500,000**	**38.36**			
SMW10	RA-4253	326600	326573	27,000	0.08	0	0	N/A
SMW11	RA-4255	366921	366921	0	0.00	0	0	N/A
SMW18	RA-4253S	1135785	1087076	48,709,000	149.48	178	177	1
Six Mile Hill Wells Total Water Produced				**48,736,000**	**149.57**			
SRW12	RA-681	31506	29549	1,957,000	6.01	0	0	N/A
SRW13	RA-1823	184861	183337	1,524,000	4.68	0	0	N/A
SRW15	RA-977C	86	0	86,000	0.26	0	0	N/A
SRW16	RA-98S2	2998941	2901842	97,099,000	297.99	0	0	N/A
SRW17	RA-98S3	1711117	1678256	32,861,000	100.85	0	0	N/A
South of Roswell Wells Total Water Produced				**133,527,000**	**409.78**			
Water System Wells Total Water Produced				**194,763,000**	**597.71**			
SRW4	RA-98S	39131	39131	0	0.00			
SRW8	RA-2167	2587370	2585908	1,462,000	4.49			
Dow	RA-339B	1751226	1751189	1,206	0.00			
Joyce	RA-1127	205230	202896	76,053	0.23			
Parks Wells Total Water Produced				**1,539,259**	**4.72**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	0	0.00	0.00%
Trigg Wells	0	0.00	0.00%
RIAC Wells	12,500,000	38.36	6.37%
Six Mile Hill Wells	48,736,000	149.57	24.83%
South of Roswell Wells	133,527,000	409.78	68.02%
Park's Wells	1,539,259	4.72	0.78%
Combined Totals	**196,302,259**	**602.43**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	196,302,259	602.43
Park's Wells	1,539,259	4.72
Park's Meters	0	0.00
Golf Course Meters	0	0.00
Cemetery Meters	0	0.00
Water for Sale	**194,763,000**	**597.71**

	Gallons Produced
11/01/13 through 12/31/13	424,211,000
11/01/14 through 12/31/14	428,198,000
11/01/15 through 12/31/15	430,508,000
December 2013	179,838,000
December 2014	194,499,000
December 2015	194,763,000

Produced By:
Roger Buckley

City of Roswell
Monthly Water Production Report
November 01, 2015 through November 30, 2015

Well	Well File	Current Read	Previous Read	Gallons Produced	Acre Ft. Produced	Pumping Level	Static Level	Draw Down
KW1	RA-2084-X	574868	519359	55,509,000	170.35	0	0	N/A
KW2	RA-2084-X2	373151	363473	9,678,000	29.70	176	165	11
KW3	RA-2084-X3	172338	172264	74,000	0.23	0	0	N/A
KW4	RA-2084-X4	1485193	1415595	69,598,000	213.59	173	156	17
KW5	RA-2009-S4	732559	732559	0	0.00	0	0	N/A
KW6	RA-2009-S3	155744	155744	0	0.00	0	0	N/A
Kerr WellsTotal Water Produced				**134,859,000**	**413.87**			
TW1	RA-2823	404933	404668	265,000	0.81	280	267	13
TW2	RA-2823S	417359	417002	357,000	1.10	0	0	N/A
Trigg Wells Total Water Produced				**622,000**	**1.91**			
RW1	RA-2009	4368	4280	88,000	0.27	0	0	N/A
RW3	RA-2025	809813	799504	10,309,000	31.64	114	108	6
RW4	RA-2009S	23662	22657	1,005,000	3.08	0	0	N/A
RW5	RA-2009-S2	17780	17719	61,000	0.19	0	0	N/A
RIAC Wells Total Water Produced				**11,463,000**	**35.18**			
SMW10	RA-4253	326573	326426	147,000	0.45	0	0	N/A
SMW11	RA-4255	366921	366769	152,000	0.47	0	0	N/A
SMW18	RA-4253S	1087076	1035379	51,697,000	158.65	0	0	N/A
Six Mile Hill Wells Total Water Produced				**51,996,000**	**159.57**			
SRW12	RA-681	29549	29497	52,000	0.16	0	0	N/A
SRW13	RA-1823	183337	183208	129,000	0.40	0	0	N/A
SRW15	RA-977C	235541	235541	0	0.00	0	0	N/A
SRW16	RA-98S2	2901842	2866036	35,806,000	109.88	114	111	3
SRW17	RA-98S3	1678256	1677438	818,000	2.51	0	0	N/A
South of Roswell Wells Total Water Produced				**36,805,000**	**112.95**			
Water System Wells Total Water Produced				**235,745,000**	**723.48**			
SRW4	RA-98S	39131	39131	0	0.00			
SRW8	RA-2167	2585908	2584265	1,643,000	5.04			
Dow	RA-339B	1751189	1750425	24,895	0.08			
Joyce	RA-1127	202896	201073	59,402	0.18			
Parks Wells Total Water Produced				**1,727,297**	**5.30**			

Well Field	Total Gallons Produced	Total Acre Ft. Produced	Percent of Total Water Produced
Kerr Wells	134,859,000	413.87	56.79%
Trigg Wells	622,000	1.91	0.26%
RIAC Wells	11,463,000	35.18	4.83%
Six Mile Hill Wells	51,996,000	159.57	21.90%
South of Roswell Wells	36,805,000	112.95	15.50%
Park's Wells	1,727,297	5.30	0.73%
Combined Totals	**237,472,297**	**728.78**	

Water for Sale = Combined Totals - (Park's Wells, Park's Meters, Golf Course Meters & Cemetery Meters)

	Gallons	Acre Ft.
Combined Totals	237,472,297	728.78
Park's Wells	1,727,297	5.30
Park's Meters	6,220,969	19.09
Golf Course Meters	1,077,345	3.31
Cemetery Meters	294,100	0.90
Water for Sale	**228,152,586**	**700.18**

	Gallons Produced
11/01/13 through 11/30/13	244,373,000
11/01/14 through 11/30/14	233,699,000
11/01/15 through 11/30/15	235,745,000
November 2013	244,373,000
November 2014	233,699,000
November 2015	235,745,000

Produced By:
Roger Buckley

Appendix B-Water Consumption

A.2 Billed Water

2014	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	$275,522	$291,581	$306,575	$374,412	$432,603	$440,354	$443,803	$385,483	$376,960	$315,783	$293,932	$316,617	**$4,253,626**
100	$56,497	$60,980	$67,182	$91,151	$107,268	$108,487	$119,231	$85,430	$93,573	$75,678	$67,604	$70,140	**$1,003,221**
150	$41,023	$44,199	$49,039	$62,011	$73,742	$77,668	$78,618	$70,942	$69,558	$53,662	$49,406	$45,623	**$715,491**
200	$46,165	$47,562	$54,670	$71,232	$84,079	$84,947	$72,726	$79,922	$70,861	$59,583	$52,428	$52,210	**$776,385**
300	$12,985	$11,659	$21,637	$23,798	$27,841	$29,482	$13,265	$33,908	$23,938	$23,524	$18,517	$18,677	**$259,231**
400	$16,415	$8,502	$34,798	$28,963	$33,763	$34,185	$10,382	$45,372	$33,883	$27,952	$26,502	$29,337	**$330,054**
600	$6,064	$3,953	$8,950	$7,664	$8,395	$8,712	$6,428	$9,903	$8,989	$9,901	$7,995	$9,045	**$95,998**
800	$157	$157	$157	$157	$157	$157	$157	$157	$157	$157	$157	$157	**$1,886**
Grand Total	**$454,828**	**$468,594**	**$543,007**	**$659,388**	**$767,847**	**$783,991**	**$744,610**	**$711,117**	**$677,920**	**$566,241**	**$516,541**	**$541,806**	**$7,435,892**

A.3 Metered Water Consumption (kGal)

2014	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	80,342	90,514	99,578	140,031	174,682	179,136	184,623	156,980	141,504	104,777	91,805	90,481	**1,534,451**
100	18,464	21,114	24,680	38,646	48,028	48,706	55,057	38,667	39,999	29,684	24,962	22,703	**410,710**
150	11,887	13,845	16,468	24,038	30,700	32,676	33,548	30,678	28,393	19,250	16,844	12,825	**271,153**
200	18,426	19,973	22,657	32,603	39,166	39,891	34,832	38,277	31,985	26,281	21,829	19,631	**345,553**
300	5,401	5,269	9,864	11,706	14,104	15,050	6,697	17,623	11,773	11,540	8,624	7,618	**125,269**
400	8,245	4,008	18,528	15,359	18,125	18,352	4,939	24,825	18,202	14,778	13,985	15,071	**174,415**
600	3,181	2,085	4,728	4,111	4,536	4,720	3,524	5,413	4,882	5,412	4,304	4,786	**51,681**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Grand Total	**145,946**	**156,807**	**196,502**	**266,495**	**329,342**	**338,532**	**323,219**	**312,463**	**276,737**	**211,722**	**182,352**	**173,116**	**2,913,231**

A.4 Metered Water Consumption Above 3 KGal

2014	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	45,262	54,823	63,561	102,615	136,557	140,855	148,098	123,595	104,230	68,390	56,583	49,667	**1,094,236**
100	13,266	15,848	19,281	32,994	42,274	42,910	49,341	34,230	34,325	24,138	19,568	16,181	**344,356**
150	9,391	11,313	13,863	21,314	27,955	29,911	30,798	28,239	25,684	16,608	14,260	10,018	**239,353**
200	17,349	18,938	21,405	31,398	37,949	38,673	33,795	37,159	30,787	25,120	20,690	18,314	**331,577**
300	5,201	5,104	9,551	11,446	13,849	14,794	6,573	17,371	11,526	11,302	8,385	7,271	**122,373**
400	8,161	3,951	18,414	15,269	18,032	18,265	4,894	24,735	18,112	14,686	13,901	14,949	**173,367**
600	3,160	2,070	4,701	4,090	4,515	4,699	3,509	5,392	4,861	5,391	4,283	4,756	**51,426**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Grand Total	**101,790**	**112,047**	**150,776**	**219,127**	**281,131**	**290,107**	**277,007**	**270,720**	**229,524**	**165,635**	**137,668**	**121,156**	**2,356,688**

A.5 Actual CNS with Existing Meter

2014		Month												Grand Total
Meter Size	Meter Acc	1	2	3	4	5	6	7	8	9	10	11	12	
75	86.8%	92,589	104,312	114,757	161,378	201,311	206,443	212,767	180,910	163,075	120,749	105,800	104,274	1,768,365
100	95.7%	19,292	22,060	25,786	40,379	50,182	50,890	57,525	40,400	41,792	31,014	26,081	23,721	429,123
150	95.4%	12,457	14,508	17,258	25,191	32,172	34,242	35,156	32,149	29,754	20,173	17,651	13,440	284,151
200	84.6%	21,771	23,598	26,769	38,521	46,274	47,131	41,153	45,225	37,790	31,051	25,791	23,194	408,269
300	67.0%	8,058	7,860	14,716	17,463	21,042	22,453	9,992	26,292	17,564	17,216	12,866	11,365	186,888
400	67.0%	12,300	5,980	27,641	22,913	27,040	27,380	7,369	37,036	27,155	22,047	20,864	22,484	260,209
600	67.0%	4,745	3,111	7,053	6,134	6,768	7,042	5,257	8,075	7,283	8,074	6,420	7,140	77,102
800	67.0%	-	-	-	-	-	-	-	-	-	-	-	-	-
	Grand Total	171,212	181,429	233,981	311,978	384,788	395,582	369,218	370,087	324,413	250,325	215,473	205,619	3,414,106

A.6 CNS with New Meter

2014	2014	Month												Grand Total
Meter Size	Meter Acc	1	2	3	4	5	6	7	8	9	10	11	12	
75	98.5%	91,200	102,747	113,036	158,957	198,291	203,347	209,576	178,196	160,629	118,938	104,213	102,710	1,741,840
100	98.5%	19,003	21,729	25,400	39,773	49,429	50,127	56,662	39,794	41,165	30,549	25,690	23,365	422,686
150	98.5%	12,270	14,291	16,999	24,813	31,689	33,729	34,629	31,667	29,308	19,871	17,386	13,238	279,888
200	98.5%	21,444	23,244	26,368	37,943	45,580	46,425	40,536	44,546	37,224	30,585	25,404	22,847	402,145
300	98.5%	7,937	7,742	14,495	17,201	20,727	22,116	9,842	25,898	17,301	16,958	12,673	11,195	184,084
400	98.5%	12,116	5,890	27,227	22,570	26,634	26,969	7,258	36,480	26,748	21,717	20,551	22,146	256,306
600	98.5%	4,674	3,064	6,947	6,042	6,666	6,936	5,178	7,954	7,174	7,953	6,324	7,033	75,946
800	98.5%	-	-	-	-	-	-	-	-	-	-	-	-	-
	Grand Total	168,644	178,708	230,471	307,299	379,016	389,648	363,680	364,536	319,547	246,570	212,241	202,535	3,362,894

A.7 New Meter CNS above 3 kGal

2014	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	55,297	66,323	76,331	121,017	159,760	164,678	172,661	144,451	122,808	81,847	68,168	60,820	**1,294,159**
100	13,782	16,444	19,983	34,108	43,665	44,321	50,938	35,350	35,480	24,988	20,275	16,813	**356,147**
150	9,764	11,749	14,385	22,082	28,940	30,960	31,875	29,224	26,593	17,220	14,793	10,418	**248,002**
200	20,353	22,199	25,105	36,730	44,355	45,200	39,494	43,421	36,015	29,415	24,253	21,507	**388,047**
300	7,733	7,575	14,180	16,939	20,469	21,858	9,716	25,642	17,051	16,716	12,432	10,843	**181,154**
400	12,029	5,833	27,111	22,480	26,541	26,881	7,213	36,390	26,658	21,624	20,466	22,023	**255,249**
600	4,653	3,049	6,920	6,021	6,645	6,915	5,163	7,933	7,153	7,932	6,303	7,003	**75,691**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	123,611	**133,171**	**184,015**	**259,377**	**330,374**	**340,812**	**317,060**	**322,411**	**271,758**	**199,742**	**166,689**	**149,427**	**2,798,449**

A.8 Delta in Meter CNS above 3 kGal

2014	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	10,035	11,500	12,770	18,402	23,202	23,823	24,563	20,856	18,578	13,457	11,585	11,153	**199,924**
100	516	596	702	1,114	1,391	1,411	1,597	1,120	1,155	850	707	632	**11,791**
150	372	436	522	769	984	1,049	1,077	985	909	612	533	400	**8,649**
200	3,004	3,261	3,700	5,332	6,407	6,526	5,700	6,262	5,228	4,294	3,563	3,193	**56,470**
300	2,532	2,471	4,628	5,493	6,620	7,064	3,143	8,271	5,526	5,415	4,047	3,572	**58,781**
400	3,869	1,882	8,698	7,210	8,510	8,616	2,319	11,656	8,546	6,938	6,565	7,074	**81,882**
600	1,493	979	2,220	1,930	2,130	2,216	1,654	2,541	2,292	2,541	2,021	2,247	**24,265**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	21,821	**21,124**	**33,239**	**40,250**	**49,243**	**50,705**	**40,053**	**51,691**	**42,234**	**34,108**	**29,021**	**28,271**	**441,761**

A.1 Meter Count

2015	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	14,076	14,078	14,122	14,090	14,096	14,128	14,159	14,173	14,175	14,188	14,147	12,759	**168,191**
100	2,089	2,096	2,089	2,092	2,093	2,094	2,103	2,107	2,118	2,114	2,112	1,805	**24,912**
150	1,002	1,004	1,005	1,005	1,004	1,011	1,007	1,005	1,006	1,012	1,010	892	**11,963**
200	458	455	455	455	457	457	455	457	454	457	454	346	**5,360**
300	99	98	97	97	97	97	97	99	97	99	97	45	**1,119**
400	35	34	34	34	34	34	34	34	33	35	33	15	**389**
600	8	8	8	8	8	8	8	8	8	8	8	5	**93**
800	1	1	1	1	1	1	1	1	1	1	1	1	**12**
Grand Total	**17,768**	**17,774**	**17,811**	**17,782**	**17,790**	**17,830**	**17,864**	**17,884**	**17,892**	**17,914**	**17,862**	**15,868**	**212,039**

A.2 Billed Water

2015	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	$288,985	$276,148	$280,370	$358,983	$369,575	$384,974	$461,739	$502,043	$450,717	$359,607	$292,290	$256,850	**$4,282,282**
100	$56,914	$55,189	$57,236	$87,175	$87,862	$94,100	$119,824	$127,845	$115,217	$87,763	$66,578	$52,487	**$1,008,189**
150	$42,024	$40,830	$41,307	$58,538	$63,216	$111,873	$80,708	$88,468	$81,847	$64,199	$48,139	$38,882	**$760,030**
200	$46,741	$44,767	$45,825	$67,325	$64,570	$71,211	$84,020	$91,638	$87,633	$66,827	$50,245	$37,149	**$757,951**
300	$14,174	$15,497	$15,649	$22,625	$21,175	$22,800	$29,759	$33,752	$34,564	$24,221	$16,863	$10,013	**$261,092**
400	$16,016	$17,509	$17,668	$25,723	$22,530	$25,813	$38,724	$38,828	$36,363	$24,150	$16,698	$8,611	**$288,634**
600	$6,921	$6,164	$6,804	$7,731	$7,460	$7,828	$9,677	$9,583	$10,122	$6,845	$6,184	$3,581	**$88,900**
800	$168	$168	$168	$168	$168	$168	$168	$168	$168	$168	$168	$168	**$2,021**
Grand Total	**$471,943**	**$456,273**	**$465,028**	**$628,269**	**$636,556**	**$718,768**	**$824,619**	**$892,325**	**$816,632**	**$633,780**	**$497,165**	**$407,742**	**$7,449,099**

A.3 Metered Water Consumption (kGal)

2015	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	77,485	70,377	72,646	117,292	123,098	131,798	173,861	196,098	167,470	116,958	78,920	67,532	**1,393,536**
100	16,512	15,468	16,689	32,995	33,500	36,729	50,295	54,671	47,919	33,185	21,722	16,147	**375,834**
150	10,916	10,256	10,510	19,816	22,342	48,580	31,414	35,784	32,242	23,063	14,370	10,797	**270,089**
200	16,676	15,848	16,442	27,100	25,991	29,450	36,887	40,406	38,335	28,027	18,854	14,360	**308,377**
300	5,561	6,299	6,381	10,184	9,362	10,224	13,997	16,083	16,579	10,963	7,070	4,430	**117,133**
400	6,708	8,237	8,325	12,574	10,743	12,554	19,542	19,567	18,215	11,690	7,803	4,002	**139,961**
600	3,416	3,005	3,353	3,857	3,709	3,909	4,914	4,863	5,156	3,375	3,019	1,733	**44,308**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Grand Total	**137,275**	**129,491**	**134,346**	**223,818**	**228,745**	**273,245**	**330,909**	**367,472**	**325,917**	**227,262**	**151,759**	**118,999**	**2,649,237**

A.4 Metered Water Consumption Above 3 KGal

2015	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	42,747	36,307	38,161	80,556	86,246	94,519	135,747	157,779	129,626	80,325	44,359	36,423	**962,795**
100	11,373	10,337	11,493	27,395	27,900	31,087	44,542	48,884	42,146	27,584	16,393	11,670	**310,805**
150	8,432	7,830	8,044	17,175	19,672	45,879	28,685	33,034	29,470	20,337	11,817	8,571	**238,948**
200	15,594	14,774	15,339	25,902	24,798	28,229	35,658	39,176	37,129	26,832	17,733	13,506	**294,671**
300	5,341	6,083	6,155	9,936	9,121	9,990	13,754	15,834	16,335	10,722	6,842	4,312	**114,425**
400	6,624	8,154	8,238	12,487	10,658	12,464	19,450	19,477	18,128	11,597	7,722	3,957	**138,955**
600	3,395	2,984	3,332	3,836	3,688	3,888	4,893	4,842	5,135	3,354	2,995	1,718	**44,059**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Grand Total	**93,506**	**86,469**	**90,762**	**177,286**	**182,084**	**226,055**	**282,729**	**319,027**	**277,970**	**180,751**	**107,862**	**80,156**	**2,104,659**

A.5 Actual CNS with Existing Meter

2015		Month												Grand Total
Meter Size	Meter Acc	1	2	3	4	5	6	7	8	9	10	11	12	
75	86.8%	89,297	81,106	83,720	135,172	141,863	151,890	200,365	225,992	193,000	134,787	90,950	77,826	**1,605,968**
100	95.7%	17,253	16,162	17,437	34,475	35,002	38,376	52,550	57,122	50,067	34,673	22,696	16,871	**392,683**
150	95.4%	11,439	10,747	11,014	20,765	23,413	50,909	32,919	37,499	33,787	24,168	15,059	11,314	**283,036**
200	84.6%	19,703	18,725	19,426	32,019	30,708	34,795	43,582	47,739	45,293	33,114	22,276	16,966	**364,347**
300	67.0%	8,296	9,397	9,519	15,193	13,967	15,253	20,882	23,995	24,735	16,356	10,548	6,609	**174,749**
400	67.0%	10,008	12,289	12,420	18,759	16,028	18,730	29,154	29,191	27,175	17,440	11,642	5,970	**208,806**
600	67.0%	5,097	4,483	5,002	5,754	5,534	5,832	7,331	7,255	7,693	5,035	4,504	2,585	**66,103**
800	67.0%	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	Grand Total	**161,093**	**152,909**	**158,539**	**262,137**	**266,514**	**315,785**	**386,783**	**428,793**	**381,749**	**265,574**	**177,675**	**138,141**	**3,095,692**

A.6 CNS with New Meter

2015		Month												Grand Total
Meter Size	Meter Acc	1	2	3	4	5	6	7	8	9	10	11	12	
75	98.5%	87,957	79,889	82,464	133,145	139,735	149,611	197,359	222,602	190,105	132,766	89,586	76,659	**1,581,878**
100	98.5%	16,994	15,919	17,175	33,957	34,477	37,800	51,762	56,266	49,316	34,153	22,356	16,618	**386,793**
150	98.5%	11,268	10,586	10,849	20,454	23,062	50,146	32,426	36,937	33,280	23,806	14,833	11,145	**278,790**
200	98.5%	19,408	18,444	19,135	31,539	30,247	34,273	42,928	47,023	44,613	32,618	21,942	16,711	**358,882**
300	98.5%	8,171	9,256	9,377	14,965	13,757	15,024	20,568	23,635	24,364	16,110	10,390	6,509	**172,128**
400	98.5%	9,858	12,105	12,234	18,477	15,787	18,449	28,717	28,753	26,767	17,179	11,467	5,881	**205,674**
600	98.5%	5,021	4,416	4,927	5,667	5,451	5,744	7,221	7,146	7,577	4,960	4,436	2,546	**65,112**
800	98.5%	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	Grand Total	**158,676**	**150,615**	**156,161**	**258,205**	**262,516**	**311,048**	**380,981**	**422,362**	**376,023**	**261,591**	**175,010**	**136,069**	**3,049,257**

A.7 New Meter CNS above 3 kGal

2015	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	52,332	44,821	47,024	95,801	102,290	111,800	158,819	183,874	151,797	95,480	54,079	44,709	**1,142,826**
100	11,830	10,760	11,955	28,344	28,863	32,145	45,999	50,469	43,534	28,538	17,003	12,119	**321,560**
150	8,771	8,147	8,370	17,807	20,386	47,439	29,693	34,183	30,505	21,074	12,270	8,909	**247,555**
200	18,308	17,354	18,017	30,330	29,047	33,042	41,692	45,785	43,398	31,414	20,808	15,846	**345,040**
300	7,949	9,036	9,147	14,714	13,515	14,787	20,322	23,383	24,117	15,867	10,160	6,390	**169,387**
400	9,773	12,021	12,147	18,390	15,702	18,358	28,624	28,663	26,680	17,086	11,386	5,836	**204,666**
600	5,000	4,395	4,906	5,646	5,430	5,723	7,200	7,125	7,556	4,939	4,412	2,531	**64,863**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	113,964	**106,535**	**111,564**	**211,033**	**215,233**	**263,294**	**332,349**	**373,484**	**327,587**	**214,397**	**130,117**	**96,339**	**2,495,896**

A.8 Delta in Meter CNS above 3 kGal

2015	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	9,585	8,514	8,863	15,245	16,044	17,282	23,072	26,095	22,171	15,155	9,720	8,286	**180,031**
100	457	424	462	949	964	1,058	1,457	1,585	1,388	954	609	449	**10,755**
150	340	317	325	632	714	1,559	1,008	1,149	1,035	737	452	339	**8,607**
200	2,714	2,580	2,678	4,428	4,248	4,813	6,034	6,609	6,269	4,582	3,074	2,340	**50,368**
300	2,608	2,953	2,991	4,778	4,394	4,797	6,569	7,549	7,782	5,145	3,318	2,078	**54,962**
400	3,149	3,867	3,909	5,904	5,044	5,894	9,174	9,187	8,552	5,489	3,664	1,879	**65,710**
600	1,604	1,411	1,574	1,811	1,742	1,835	2,307	2,283	2,421	1,585	1,417	813	**20,803**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
	20,457	**20,066**	**20,802**	**33,747**	**33,149**	**37,239**	**49,620**	**54,457**	**49,617**	**33,646**	**22,255**	**16,184**	**391,237**

Appendix C-Sewer Consumption

B.1 Billed Sewer

2014	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	$217,770	$216,966	$213,584	$214,275	$213,780	$214,602	$204,533	$185,749	$214,281	$213,882	$211,695	$251,371	**$2,572,489**
100	$37,488	$37,060	$35,799	$36,274	$36,947	$36,844	$37,091	$29,348	$36,958	$36,219	$35,690	$44,538	**$440,256**
150	$21,003	$21,323	$20,214	$21,221	$22,051	$23,080	$22,767	$21,695	$22,660	$22,229	$20,669	$21,494	**$260,406**
200	$19,407	$19,704	$21,360	$23,445	$25,167	$26,712	$22,286	$26,648	$24,907	$23,198	$20,132	$22,371	**$275,337**
300	$6,691	$6,387	$8,623	$9,387	$11,184	$11,272	$7,805	$12,365	$9,932	$10,010	$8,175	$9,111	**$110,942**
400	$5,537	$4,971	$7,697	$6,592	$9,238	$6,907	$5,684	$10,049	$9,298	$9,042	$8,856	$8,676	**$92,546**
600	$2,508	$2,751	$2,658	$2,972	$3,331	$3,144	$3,377	$3,266	$2,919	$3,334	$2,849	$3,199	**$36,308**
800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Grand Total	**$310,404**	**$309,162**	**$309,934**	**$314,166**	**$321,699**	**$322,561**	**$303,543**	**$289,120**	**$320,954**	**$317,914**	**$308,066**	**$360,760**	**$3,788,284**

B.2 Metered Sewer Consumption (kGal)

2014	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	80,017	79,649	76,823	77,193	77,123	77,465	73,666	66,118	77,301	76,650	75,670	91,290	**928,966**
100	17,147	16,869	15,757	16,145	16,716	16,569	16,929	13,475	16,640	16,091	15,722	19,740	**197,800**
150	10,405	10,684	9,748	10,562	11,258	12,014	11,884	11,562	11,680	11,339	10,118	10,033	**131,286**
200	12,893	13,301	14,277	16,096	17,463	18,682	15,536	18,747	17,243	15,894	13,458	14,745	**188,334**
300	4,798	4,660	6,189	6,921	8,346	8,441	5,899	9,298	7,328	7,410	5,961	6,489	**81,743**
400	4,253	3,845	5,927	5,091	7,191	5,341	4,437	7,841	7,238	7,035	6,887	6,671	**71,757**
600	1,944	2,150	2,049	2,312	2,597	2,449	2,647	2,545	2,270	2,599	2,214	2,479	**28,252**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Grand Total	**131,457**	**131,157**	**130,770**	**134,320**	**140,694**	**140,960**	**130,998**	**129,585**	**139,699**	**137,018**	**130,031**	**151,447**	**1,628,137**

B.1 Billed Sewer

2015	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
75	$225,720	$224,837	$214,482	$215,012	$214,505	$214,653	$215,663	$215,694	$215,895	$215,941	$213,663	$192,368	**$2,578,434**
100	$38,346	$38,588	$34,833	$35,769	$35,495	$35,684	$37,289	$37,352	$36,785	$35,808	$34,965	$29,968	**$430,879**
150	$21,245	$21,530	$19,626	$21,311	$21,582	$55,871	$22,766	$23,367	$23,405	$22,167	$20,825	$18,433	**$292,127**
200	$20,302	$19,719	$20,145	$23,929	$22,955	$24,561	$27,089	$28,319	$28,303	$25,258	$20,878	$18,402	**$279,859**
300	$7,606	$7,609	$7,675	$10,216	$9,205	$9,478	$11,552	$13,922	$13,304	$11,984	$8,186	$6,393	**$117,129**
400	$6,799	$7,858	$7,694	$7,510	$6,902	$7,684	$7,891	$9,008	$8,458	$7,535	$5,433	$4,149	**$86,921**
600	$3,038	$2,523	$2,770	$3,075	$3,076	$3,121	$3,336	$3,403	$2,897	$3,051	$2,911	$2,590	**$35,790**
800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Grand Total	**$323,056**	**$322,663**	**$307,224**	**$316,821**	**$313,719**	**$351,051**	**$325,586**	**$331,065**	**$329,047**	**$321,744**	**$306,859**	**$272,303**	**$3,821,138**

B.2 Metered Sewer Consumption (kGal)

2015	Month												Grand Total
Meter Size	1	2	3	4	5	6	7	8	9	10	11	12	
75	75,056	74,631	66,654	66,982	66,526	66,672	67,199	67,200	67,241	67,178	65,847	58,909	**810,094**
100	15,769	15,919	13,203	13,871	13,665	13,811	14,945	14,968	14,497	13,745	13,180	11,235	**168,809**
150	9,491	9,691	8,262	9,514	9,712	35,106	10,599	11,056	11,065	10,139	9,164	7,995	**141,795**
200	12,512	12,081	12,393	15,201	14,476	15,665	17,549	18,448	18,455	16,200	12,949	11,576	**177,506**
300	5,119	5,111	5,162	7,045	6,294	6,520	8,064	9,799	9,334	8,338	5,540	4,425	**80,751**
400	4,895	5,680	5,558	5,422	4,971	5,551	5,704	6,532	6,131	5,434	3,884	3,006	**62,768**
600	2,203	1,822	2,005	2,231	2,231	2,265	2,424	2,474	2,099	2,213	2,109	1,885	**25,961**
800	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Grand Total	**125,046**	**124,935**	**113,237**	**120,265**	**117,877**	**145,590**	**126,485**	**130,476**	**128,822**	**123,248**	**112,672**	**99,030**	**1,467,683**

Appendix-C Rates

CITY OF ROSWELL, NM

JANUARY 1, 2012 TO DECEMBER 31, 2012

WATER CHARGES - 3% increase

		INSIDE		OUTSIDE	
		FIRST 3,000 GAL	AFTER - PER T-gal	FIRST 3,000 GAL	AFTER - PER T-gal
3/4"	(075)	$10.34	$1.27	$20.68	$2.54
1"	(100)	$11.52		$23.04	
1 1/2 "	(150)	$17.59		$35.18	
2"	(200)	$22.92		$45.84	
3"	(300)	$29.05		$58.10	
4"	(400)	$43.58		$87.16	
6"	(600)	$58.05		$116.10	

SEWER CHARGES - 3% increase

BASE RATE	AFTER - PER T-gal		
$6.25	$0.93	NONE	NONE

CITY OF ROSWELL, NM

JANUARY 1, 2013 TO DECEMBER 31, 2013 increase March 2013

WATER CHARGES - 3% increase

		INSIDE		OUTSIDE	
		FIRST 3,000 GAL	AFTER - PER T-gal	FIRST 3,000 GAL	AFTER - PER T-gal
3/4"	(075)	$10.65	$1.31	$21.30	$2.62
1"	(100)	$11.87		$23.74	
1 1/2 "	(150)	$18.12		$36.24	
2"	(200)	$23.61		$47.22	
3"	(300)	$29.92		$59.84	
4"	(400)	$44.89		$89.78	
6"	(600)	$59.79		$119.58	

SEWER CHARGES - 3% increase

BASE RATE	AFTER - PER T-gal		
$6.44	$0.96	NONE	NONE

CITY OF ROSWELL, NM

March 1, 2013 TO December 31, 2013

WATER CHARGES % INCREASE 22.08%

CITY SERVICE

METER SIZE	METER SIZE	First 3,000 GAL	After - PER T-gal
3/4"	0.750	$13.00	$1.60
1"	1.000	$14.49	
1 1/2"	1.500	$22.12	
2"	2.000	$28.82	
3"	3.000	$36.53	
4"	4.000	$54.80	
6"	6.000	$72.99	

COUNTY SERVICE

First 3,000 GAL		After - PER T-gal
$26.00		$3.20
$28.98		
$44.24		
$57.64		
$73.06		
$109.60		
$145.98		

SEWER CHARGES 22.08%

CITY SERVICE

BASE RATE		PER T-gal
$7.86	$7.86	$1.17

COUNTY SERVICE

First 3,000 GAL		PER T-gal
$15.72		$2.34

CITY OF ROSWELL, NM

JANUARY 1, 2014 TO DECEMBER 31, 2014

WATER CHARGES % INCREASE 7.69%

CITY SERVICE

METER SIZE	METER SIZE	First 3,000 GAL	After - PER T-gal
3/4"	0.750	$14.00	$1.72
1"	1.000	$15.60	
1 1/2"	1.500	$23.82	
2"	2.000	$31.04	
3"	3.000	$39.34	
4"	4.000	$59.01	
6"	6.000	$78.60	

COUNTY SERVICE

First 3,000 GAL		After - PER T-gal
$28.00		$3.44
$31.20		
$47.64		
$62.08		
$78.67		
$118.02		
$157.20		

SEWER CHARGES 7.69%

CITY SERVICE

BASE RATE		PER T-gal
$8.46	$8.46	$1.26

COUNTY SERVICE

First 3,000 GAL		PER T-gal
$16.92		$2.52

JANUARY 1, 2015 TO DECEMBER 31, 2015

WATER CHARGES % INCREASE 7.13%

CITY SERVICE

METER SIZE	METER SIZE	First 3,000 GAL	After - PER T-gal
3/4"	0.750	$15.00	$1.84
1"	1.000	$16.71	
1 1/2"	1.500	$25.52	
2"	2.000	$33.25	
3"	3.000	$42.14	
4"	4.000	$63.22	
6"	6.000	$84.20	

COUNTY SERVICE

First 3,000 GAL		After - PER T-gal
$30.00		$3.68
$33.42		
$51.04		
$66.50		
$84.28		
$126.44		
$168.40		

SEWER CHARGES 7.13%

CITY SERVICE

BASE RATE		PER T-gal
$9.06	$9.06	$1.35

COUNTY SERVICE

First 3,000 GAL		PER T-gal
$18.12		$2.70

CITY OF ROSWELL, NM

JANUARY 1, 2016 TO DECEMBER 31, 2016

WATER CHARGES % INCREASE 6.67%

CITY SERVICE

METER SIZE	METER SIZE	First 3,000 GAL	After - PER T-gal
3/4"	0.750	$16.00	$1.96
1"	1.000	$17.82	
1 1/2"	1.500	$27.22	
2"	2.000	$35.47	
3"	3.000	$44.95	
4"	4.000	$67.44	
6"	6.000	$89.82	

COUNTY SERVICE

First 3,000 GAL		After - PER T-gal
$32.00		$3.92
$35.64		
$54.44		
$70.94		
$89.90		
$134.88		
$179.64		

SEWER CHARGES 6.67%

CITY SERVICE

BASE RATE		PER T-gal
$9.66	$9.66	$1.44

COUNTY SERVICE

First 3,000 GAL		PER T-gal
$19.32		$2.88

City of Roswell, NM
January 1, 2013 To March 31, 2014
Water Charges % increase 3.00%

2014	City Service		County Service	
Meter Size	First 3 kGal	After Per kGal	First 3 kGal	After Per kGal
3/4"	$10.65		$21.30	
1"	$11.87		$23.74	
1 1/2"	$18.12		$36.24	
2"	$23.61	$1.31	$47.22	$2.62
3"	$29.92		$59.84	
4"	$44.89		$89.78	
6"	$59.79		$119.58	

Sewer Charges % increase 7.69%

City Service		County Service	
Base Rate	Per kGal	First 3 kGak	After Per kGal
$6.44	$0.96	None	None

City of Roswell, NM
April 1, 2013 To December 31, 2013
Water Charges % increase 22.08%

2013	City Service		County Service	
Meter Size	First 3 kGal	After Per kGal	First 3 kGal	After Per kGal
3/4"	$13.00		$26.00	
1"	$14.49		$28.98	
1 1/2"	$22.12		$44.24	
2"	$28.82	$1.60	$57.64	$3.20
3"	$36.53		$73.06	
4"	$54.80		$109.60	
6"	$72.99		$145.98	

Sewer Charges % increase 7.69%

City Service		County Service	
Base Rate	Per kGal	Base Rate	Per kGal
$7.86	$7.86	$15.72	$2.34

City of Roswell, NM
January 1, 2012 To December 31, 2012
Water Charges % increase 3.00%

2012	City Service		County Service	
Meter Size	First 3 kGal	After Per kGal	First 3 kGal	After Per kGal
3/4"	$10.34		$20.68	
1"	$11.52		$23.04	
1 1/2"	$17.59		$35.18	
2"	$22.92	$1.27	$45.84	$2.54
3"	$29.05		$58.10	
4"	$43.58		$87.16	
6"	$58.05		$116.10	

Sewer Charges % increase 3.00%

City Service		County Service	
Base Rate	Per kGal	First 3 kGak	After Per kGal
$6.25	$0.93	None	None

City of Roswell, NM
January 1, 2014 To December 31, 2014
Water Charges % increase 7.69%

2014	City Service		County Service	
Meter Size	First 3 kGal	After Per kGal	First 3 kGal	After Per kGal
3/4"	$14.00		$28.00	
1"	$15.60		$31.20	
1 1/2"	$23.82		$47.64	
2"	$31.04	$1.72	$62.08	$3.44
3"	$39.34		$78.67	
4"	$59.01		$118.02	
6"	$78.60		$157.20	

Sewer Charges % increase 7.69%

City Service		County Service	
Base Rate	Per kGal	Base Rate	Per kGal
$8.46	$1.26	$16.92	$2.52

City of Roswell, NM
January 1, 2016 To December 31, 2016
Water Charges % increase 6.67%

2016	City Service		County Service	
Meter Size	First 3 kGal	After Per kGal	First 3 kGal	After Per kGal
3/4"	$16.00		$32.00	
1"	$17.82		$35.64	
1 1/2"	$27.22		$54.44	
2"	$35.47	$1.96	$70.94	$3.92
3"	$44.95		$89.90	
4"	$67.44		$134.88	
6"	$89.82		$179.64	

Sewer Charges % increase 6.67%

City Service		County Service	
Base Rate	Per kGal	Base Rate	Per kGal
$9.66	$1.44	$19.32	$2.88

City of Roswell, NM
January 1, 2015 To December 31, 2015
Water Charges % increase 7.13%

2015	City Service		County Service	
Meter Size	First 3 kGal	After Per kGal	First 3 kGal	After Per kGal
3/4"	$15.00		$30.00	
1"	$16.71		$33.42	
1 1/2"	$25.52		$51.04	
2"	$33.25	$1.84	$66.50	$3.68
3"	$42.14		$84.28	
4"	$63.22		$126.44	
6"	$84.20		$168.40	

Sewer Charges % increase 7.13%

City Service		County Service	
Base Rate	Per kGal	Base Rate	Per kGal
$9.06	$1.35	$18.12	$2.70

APPEDIX E-RTS Meter Test Procedure

The following are water meter field testing procedures to be followed by RTS field personnel to form the basis of quality field test investigations:

In-Place Testing

Step 1- Confirm test location

- Confirm test location by service address and meter serial number
- Inform customer (if possible) of the need for them NOT to use water while test is in progress.
- Inspect vault conditions to insure that there are no existing leaks or flowing water through meter. There can be no flowing water downstream of meter to ensure accurate test results. Isolate meter if possible.

Step 2- Test

- Hook up test meter downstream from meter to be tested Purge all air from test meter.
- Record start reading from meter to be tested.
- Perform accuracy test in 3 flow ranges.
- Record test results.

Step 3- Restore service

- Disconnect test meter.
- Restore water service.
- Inform customer of completion.

Residential/ Commercial on Site Testing

(*Several meters will be pulled and tested at one time in order to maximize efficiency)*

Step 1- Confirm test location

- Confirm test location by service address and meter serial number
- Inform customer (if possible) of the need for RTS crews to pull meter. A temporary jumper will be installed during testing.

Step 2- Testing

- Shut off water and remove existing meter.

- Install PVC spacer.
- Restore water service.
- Tag existing meter with account number and address
- After several meters have been pulled, hook pulled meters in series upstream of test meter.
- Perform accuracy test in 3 flow ranges.
- Record test results

Step 3- Restore service

- Disconnect test meter.
- Return existing meter to service address.
- Restore water service.
- Flush water line through hose bib.

Appendix F-Sample Size

M&V Guidelines:
Measurement and Verification for Federal Energy Projects
Version 3.0
Appendix B Sampling Guidelines

B.3.3 Select Samples

Select desired confidence and precision levels. A 90/10 confidence/precision level is commonly used in M&V and is suggested.

Establishing the Coefficient of Variation. Prior to selecting a sample, an estimate of the sampled coefficient of variation (C_v) must be made. A C_v of 0.5 has been historically recommended, and numerous projects have shown this to be reasonable guess for most applications. After the first year of monitoring, the coefficient of variation for each usage group can be projected from the results of the metering in the previous year.

Having selected a confidence and precision level (90/10) and a C_v (perhaps 0.5), use Equation 6 and 7, above, to calculate a sample size for each sampling group. Then, randomly select that number of samples from the population. It is strongly recommended that oversampling (at a 10% or greater level) be included in case of data collection device failure or unexpectedly high data scatter.

Table B-1 illustrates the effect of confidence interval and precision on sample size.

Table B-1 First-Year (C_v=0.5) Sample Size Table based on Usage Group Sampling[4]

Precision	20%	20%	10%
Confidence	80%	90%	90%
Z-Statistic	1.282	1.645	1.645
Population Size, N	**Sample Size, n***		
4	3	4	4
8	5	6	8
12	6	8	11
16	7	9	13
20	8	10	16
25	8	11	19
30	9	11	21
35	9	12	24
40	9	12	26
45	9	13	28
50	10	13	29
60	10	14	32
70	10	14	35
90	10	15	39
100	10	15	41
125	11	15	45

[4] Table does not reflect oversampling. However, because data collection problems are very, very common and because of the departure from normal distribution for small samples (less than 30), over-sampling is critical.

Precision	20%	20%	10%
Confidence	80%	90%	90%
Z-Statistic	1.282	1.645	1.645
Population Size, N	**Sample Size, n***		
200	11	16	51
300	11	17	56
400	11	17	59
500	11	17	60
infinite	11	17	68

The samples in each usage group should be drawn at random[5], so that each member has an equal probability of being selected.

If there is reason to believe that there are significant seasonal variations in the operation of the equipment, sufficient monitoring will need to be conducted to capture these variations.

B.4 COLLECT AND ANALYZE SAMPLE DATA

After metering has been completed, calculate mean, standard deviation and C_v (Equation 3) of the collected data for each usage group. If the actual C_v is equal to or less than the C_v originally assumed to calculate the sample size, then the confidence interval will have been met.

Using Equation 1, calculate the maximum error and confidence interval (precision) at the selected confidence level. The confidence interval is then either accepted or, if it is too large, additional sampling (and possible sampling redesign) may be required. Once a sample has been selected and monitoring is done, the engineer has no say over the results, but can rather only report their findings and the level of confidence in the findings.

B.5 EXTRAPOLATE THE RESULT FROM THE SAMPLE OVER THE ENTIRE POPULATION

Once the sample mean and standard deviation are know, the result can be applied to the entire population by assuming the mean of the sample is true for the entire population. For example, if the mean of the sample is Y kW per unit, multiplying the mean of sample by the number of units in the entire population gives the total kW.

Example

Usage group sampling can be applied to one, or numerous, buildings that are similar in function, layout, and operation.

Suppose that an ESCO is retrofitting lighting fixtures in a large office complex containing six buildings that have similar floor plans, functions, and operating schedules. As shown in Table B-2, usage group sampling is applied to each of the four usage groups that appear in the six buildings, and the sample size is 76 points.

[5] Random selection of monitoring points is critical to avoid bias in the sample. Spreadsheet or other computer software should be used to generate a list of random numbers that may be used to place loggers on a given LPC.

Appendix G-Meter Test Results

Results in yellow were omitted from the population.

Project: **Roswell, NM**
Meter Testing Results

Deemed an outlier due to "0" reads. Outliers can be toggled on and off in column S for smaller meters and U for compound meters.

Weighted Factors:	Min.	Inter.	Max.
	20%	65%	15%

					Minimum Flow Rate				Intermediate Flow Rate				Maximum Flow Rate					
Account #	Make	Address	Size	Observed Serial #	Flow Rate (GPM)	Meter Usage (Cu.Ft.)	Test Usage (Cu.Ft.)	Accuracy (%)	Flow Rate (GPM)	Meter Usage (Cu.Ft.)	Test Usage (Cu.Ft.)	Accuracy (%)	Flow Rate (GPM)	Meter Usage (Cu.Ft.)	Test Usage (Cu.Ft.)	Accuracy (%)	WAA %	Outlier?
675	Rockwell	520 E 7th St.	5/8-3/4"	31856458	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	95.0%	15.0	9.8	10.0	98.1%	76.5%	No
107855	Rockwell	522 E 7th St	5/8-3/4"	27790736	0.3	0.0	1.0	0.0%	2.0	0.0	1.0	0.0%	15.0	0.0	10.0	0.0%	0.0%	Yes
95327	Sensus	327 E 7th St.	5/8-3/4"	66002024	0.3	0.9	1.0	93.0%	2.0	1.0	1.0	99.0%	15.0	9.9	10.0	99.4%	97.9%	No
125425	Rockwell	401 E 7th St.	5/8-3/4"	18009990	0.3	0.7	1.0	72.0%	2.0	1.0	1.0	99.0%	15.0	9.8	10.0	98.0%	93.4%	No
119	Rockwell	307 E 7th St.	5/8-3/4"	30173629	0.3	0.0	1.0	0.0%	2.0	0.8	1.0	83.0%	15.0	9.7	10.0	96.7%	68.4%	Yes
103729	Sensus	315 E 7th St.	5/8-3/4"	45451471	0.3	0.0	1.0	0.0%	2.0	0.0	1.0	0.0%	15.0	0.0	10.0	0.0%	0.0%	Yes
669	Rockwell	302 E 7th St.	5/8-3/4"	31856198	0.3	0.0	1.0	1.0%	2.0	0.0	1.0	0.0%	15.0	9.7	10.0	97.0%	14.7%	Yes
4873	Sensus	304 E 7th St.	5/8-3/4"	26513833	0.3	0.0	1.0	0.0%	2.0	0.0	1.0	0.0%	15.0	9.9	10.0	98.9%	14.8%	Yes
627	Sensus	501 E 7th St. A	5/8-3/4"	48611388	0.3	0.9	1.0	88.0%	2.0	1.0	1.0	100.0%	15.0	9.8	10.0	98.4%	97.4%	No
617	Rockwell	407 E 7th St.	5/8-3/4"	17874073	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	88.0%	15.0	9.0	10.0	90.1%	70.7%	No
120911	Rockwell	501 E 7th St. B	5/8-3/4"	37244024	0.3	0.0	1.0	0.0%	2.0	1.0	1.0	100.0%	15.0	10.0	10.0	99.9%	80.0%	No
128963	Rockwell	412 E 7th St.	5/8-3/4"	36603727	0.3	1.0	1.0	99.0%	2.0	1.0	1.0	100.0%	15.0	9.3	10.0	92.6%	98.7%	No
133895	Rockwell	408 E 7th St.	5/8-3/4"	29266129	0.3	0.1	1.0	15.0%	2.0	1.0	1.0	97.0%	15.0	9.7	10.0	97.3%	80.6%	No
134233	Rockwell	406 E 7th St.	5/8-3/4"	31856277	0.3	0.6	1.0	56.0%	2.0	1.0	1.0	97.0%	15.0	9.9	10.0	98.6%	89.0%	No
719	Rockwell	320 E 7th St.	5/8-3/4"	33925390	0.3	0.5	1.0	52.0%	2.0	1.0	1.0	99.0%	15.0	9.9	10.0	98.9%	89.6%	No
78265	Sensus	328 E 7th St.	5/8-3/4"	33577137	0.3	0.2	1.0	24.0%	2.0	1.0	1.0	97.0%	15.0	9.8	10.0	98.4%	82.6%	No
118049	Sensus	306 E 7th St.	5/8-3/4"	39808229	0.3	0.8	1.0	78.0%	2.0	1.0	1.0	100.0%	15.0	9.9	10.0	98.9%	95.4%	No
126905	Sensus	318 E 7th St.	5/8-3/4"	33570904	0.3	0.0	1.0	1.0%	2.0	0.9	1.0	89.0%	15.0	9.8	10.0	98.1%	72.8%	No
151	Rockwell	309 E 7th St.	5/8-3/4"	36603949	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	93.0%	15.0	9.2	10.0	91.6%	74.2%	No
128295	Rockwell	505 E 7th St.	5/8-3/4"	37342556	0.3	0.0	1.0	1.0%	2.0	1.0	1.0	101.0%	15.0	10.1	10.0	100.7%	80.9%	No
116305	Rockwell	610 N Garden Ave.	5/8-3/4"	30174211	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	93.0%	15.0	9.9	10.0	98.9%	75.3%	No
51067	Rockwell	516 E 7th St.	5/8-3/4"	37909413	0.3	1.1	1.0	107.0%	2.0	1.0	1.0	103.8%	15.0	10.1	10.0	100.5%	103.9%	No
6007	Rockwell	514 E 7th St.	5/8-3/4"	29265968	0.3	1.0	1.0	103.0%	2.0	1.0	1.0	101.8%	15.0	10.0	10.0	99.8%	101.7%	No
96517	Rockwell	518 E 7th St.	5/8-3/4"	23458999	0.3	0.7	1.0	66.0%	2.0	1.0	1.0	98.8%	15.0	9.8	10.0	97.4%	92.0%	No
4626	Rockwell	707 S Union	5/8-3/4"	30174589	0.3	1.1	1.0	105.0%	2.0	0.9	1.0	87.0%	15.0	6.3	10.0	63.0%	87.0%	No
7508	Rockwell	1610 W Bland	5/8-3/4"	27056605	0.3	0.7	1.0	70.0%	2.0	1.0	1.0	98.0%	15.0	8.6	10.0	86.0%	90.6%	No
	Sensus	1913 W 4th	5/8-3/4"	29756852	0.3	0.4	1.0	38.0%	2.0	1.0	1.0	97.0%	15.0	8.4	10.0	83.6%	83.2%	No
5164	Rockwell	913 Davidson	5/8-3/4"	33924956	0.3	0.9	1.0	94.0%	2.0	1.0	1.0	98.0%	15.0	6.5	10.0	64.5%	92.2%	No
1216	Rockwell	1514 W Tilden	5/8-3/4"	23937274	0.3	0.1	1.0	14.0%	2.0	1.0	1.0	97.0%	15.0	9.5	10.0	94.8%	80.1%	No
8058	Rockwell	3303 Trailing Heart	5/8-3/4"	37244069	0.3	1.0	1.0	100.0%	2.0	1.0	1.0	101.0%	15.0	7.7	10.0	76.5%	97.1%	No
3712	Rockwell	314 E McCune	5/8-3/4"	69262499	0.3	1.1	1.0	106.0%	2.0	1.0	1.0	101.0%	15.0	8.6	10.0	86.5%	99.8%	No
1678	Sensus	210 E Bland	5/8-3/4"	18010019	0.3	0.0	1.0	3.0%	2.0	0.9	1.0	92.0%	15.0	7.3	10.0	72.5%	71.3%	No
	Sensus	1508 S Beech	5/8-3/4"	69262499	0.3	1.1	1.0	106.0%	2.0	1.0	1.0	101.0%	15.0	8.6	10.0	86.5%	99.8%	No
9996	Sensus	303 E Bonny	5/8-3/4"	25378688	0.3	0.8	1.0	75.0%	2.0	1.0	1.0	99.0%	15.0	7.4	10.1	72.8%	90.3%	No
29818	Sensus	1203 E Alameda	5/8-3/4"	30173375	0.3	0.0	1.0	1.0%	2.0	1.0	1.0	96.0%	15.0	7.3	10.1	72.3%	73.4%	No
30310	Rockwell	1003 E Bland	5/8-3/4"	27941836	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	91.0%	15.0	7.3	10.1	72.0%	69.9%	No
9500	Rockwell	1710 N Kansas	5/8-3/4"	28637461	0.3	0.0	1.0	1.0%	2.0	1.0	1.0	99.0%	15.0	7.3	10.1	72.7%	75.5%	No

	Rockwell	1511 N Union	5/8-3/4"	26971062	0.3	0.0	1.0	0.0%	2.0	0.0	1.0	0.0%	15.0	7.2	10.1	70.9%	10.6%	Yes
11180	Sensus	1602 S Madison	5/8-3/4"	30173235	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	91.0%	15.0	7.4	10.1	73.1%	70.1%	No
10852	Sensus	1402 S Missouri	5/8-3/4"	23459100	0.3	0.7	1.0	68.0%	2.0	1.0	1.0	97.0%	15.0	6.3	10.1	62.2%	86.0%	No
11824	Rockwell	511 E Albuquerque	5/8-3/4"	30173372	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	93.0%	15.0	7.3	10.1	71.9%	71.2%	No
15530	Rockwell	413 S Pine	5/8-3/4"	27880495	0.3	0.9	1.0	93.0%	2.0	1.0	1.0	100.0%	15.0	7.4	10.1	73.7%	94.6%	No
40130	Sensus	2309 N Grand	5/8-3/4"	27149077	0.3	0.2	1.0	15.0%	2.0	1.0	1.0	97.0%	15.0	7.3	10.1	72.0%	76.8%	No
30322	Sensus	416 Cypress	5/8-3/4"	37100683	0.3	0.8	1.0	80.0%	2.0	1.0	1.0	100.0%	15.0	7.4	10.1	73.7%	92.0%	No
31448	Sensus	1520 N Pontiac	5/8-3/4"	31856714	0.3	0.5	1.0	48.0%	2.0	1.0	1.0	95.0%	15.0	7.2	10.1	71.4%	82.1%	No
14262	Rockwell	413 W Tilden	5/8-3/4"	26904172	0.3	0.4	1.0	42.0%	2.0	1.0	1.0	99.0%	15.0	7.4	10.1	73.3%	83.7%	No
39000	Rockwell	812 N Richardson	5/8-3/4"	31855680	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	90.0%	15.0	7.2	10.1	71.3%	69.2%	No
28426	Sensus	701 Bahia	5/8-3/4"	28636902	0.3	0.8	1.0	84.0%	2.0	0.9	1.0	88.9%	15.0	7.7	10.0	76.7%	86.1%	No
	Sensus	215 Matthews	5/8-3/4"	45451447	0.3	1.0	1.0	100.0%	2.0	1.0	1.0	101.9%	15.0	7.8	10.0	77.8%	97.9%	No
43490	Rockwell	1201 S Atkinson	5/8-3/4"	42832167	0.3	1.1	1.0	106.0%	2.0	1.0	1.0	99.9%	15.0	7.7	10.0	77.1%	97.7%	No
43706	Rockwell	611 S Kentucky	5/8-3/4"	39808374	0.3	0.2	1.0	23.0%	2.0	1.0	1.0	97.9%	15.0	7.8	10.0	77.4%	79.9%	No
	Sensus	609 E 2nd	5/8-3/4"	48611466	0.3	1.0	1.0	101.0%	2.0	1.0	1.0	99.9%	15.0	7.7	10.0	77.1%	96.7%	No
29396	Rockwell	1107 W Summit	5/8-3/4"	29265804	0.3	0.7	1.0	69.0%	2.0	0.9	1.0	94.9%	15.0	7.8	10.0	77.4%	87.1%	No
44734	Sensus	110 W 1st	5/8-3/4"	48611506	0.3	1.1	1.0	108.0%	2.0	1.0	1.0	101.9%	15.0	7.8	10.0	77.9%	99.5%	No
43598	Sensus	1101 W Walnut	5/8-3/4"	29802262	0.3	1.0	1.0	100.0%	2.0	1.0	1.0	101.9%	15.0	7.7	10.0	76.7%	97.7%	No
17304	Rockwell	501 N Washington	5/8-3/4"	33120914	0.3	0.6	1.0	56.0%	2.0	1.0	1.0	97.0%	15.0	9.8	10.0	98.1%	89.0%	No
17522	Rockwell	700 E Grove	5/8-3/4"	31856112	0.3	0.6	1.0	60.0%	2.0	1.0	1.0	98.0%	15.0	9.8	10.0	97.7%	90.4%	No
25840	Rockwell	204 W Bland	5/8-3/4"	37909235	0.3	0.8	1.0	83.0%	2.0	1.0	1.0	96.0%	15.0	9.9	10.0	99.3%	93.9%	No
16248	Rockwell	200 E Lewis	5/8-3/4"	28637320	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	93.0%	15.0	9.7	10.0	96.5%	74.9%	No
24900	Sensus	2903 E Fruitland	5/8-3/4"	30173728	0.3	0.9	1.0	88.0%	2.0	1.0	1.0	102.0%	15.0	10.0	10.0	100.0%	98.9%	No
	Rockwell	1904 E 2nd	5/8-3/4"	30173588	0.3	0.7	1.0	69.0%	2.0	1.0	1.0	100.0%	15.0	10.0	10.0	99.6%	93.7%	No
40712	Rockwell	401 E Brasher	5/8-3/4"	34572553	0.3	1.0	1.0	98.0%	2.0	1.0	1.0	102.0%	15.0	9.9	10.0	99.5%	100.8%	No
17996	Rockwell	1905 N Mississippi	5/8-3/4"	37244103	0.3	0.9	1.0	90.0%	2.0	1.0	1.0	100.0%	15.0	10.0	10.0	100.3%	98.0%	No
25894	Rockwell	3000 Vasser	5/8-3/4"	30173286	0.3	0.5	1.0	52.0%	2.0	1.0	1.0	98.0%	15.0	9.7	10.0	96.9%	88.6%	No
16910	Rockwell	1516 S Adams	5/8-3/4"	22778068	0.3	0.0	1.0	3.0%	2.0	1.0	1.0	97.0%	15.0	9.7	10.0	97.3%	78.2%	No
17396	Rockwell	814 N Atkinson	5/8-3/4"	26135961	0.3	0.5	1.0	47.0%	2.0	1.0	1.0	97.0%	15.0	9.8	10.0	98.0%	87.2%	No
21008	Rockwell	704 S Michigan	5/8-3/4"	31856156	0.3	0.0	1.0	0.0%	2.0	0.9	1.0	92.0%	15.0	10.0	10.0	99.9%	74.8%	No
23832	Rockwell	506 Swinging Spear	5/8-3/4"	31855849	0.3	0.0	1.0	0.0%	2.0	1.0	1.0	98.0%	15.0	10.9	10.0	109.3%	80.1%	No

Average	80.7%
Average Omitting Outliers	86.8%

48868	Sensus	3013 N Main	1"	54834779	0.8	1.0	1.0	100.0%	4.0	1.0	1.0	98.0%	40.0	9.3	10.0	92.4%	97.6%	No
25230	Rockwell	706 E Mescalero	1"	33558204	0.8	0.9	1.0	95.0%	4.0	1.0	1.0	98.0%	40.0	9.2	10.0	91.3%	96.4%	No
45496	Rockwell	401 W Tilden	1"	31321350	0.8	0.8	1.0	82.0%	4.0	1.0	1.0	96.1%	40.0	9.1	10.0	90.3%	92.4%	No
	Sensus	1 Desert Rose	1"	68487574	0.8	1.0	1.0	101.0%	4.0	1.0	1.0	98.0%	40.0	9.3	10.0	92.5%	97.8%	No
41898	Rockwell	1801 N Garden	1"	28852588	0.8	0.8	1.0	79.0%	4.0	1.0	1.0	95.1%	40.0	9.0	10.0	90.0%	91.1%	No
40998	Sensus	415 Terra Berrenda	1"	48557985	0.8	1.0	1.0	100.0%	4.0	1.0	1.0	99.0%	40.0	9.2	10.0	92.2%	98.2%	No
48364	Sensus	1512 Latigo Cir	1"	48558020	0.8	1.0	1.0	100.0%	4.0	1.0	1.0	101.0%	40.0	9.2	10.0	92.1%	99.5%	No
48816	Sensus	102 E Frazier	1"	51811128	0.8	1.0	1.0	100.0%	4.0	1.0	1.0	99.0%	40.0	9.2	10.0	92.1%	98.2%	No
34304	Sensus	2715 Coronado	1"	15684808	0.8	1.0	1.0	100.0%	4.0	1.0	1.0	100.0%	40.0	9.3	10.0	92.3%	98.8%	No
1516	Sensus	615 S Plains Park	1"	58093874	0.8	1.0	1.0	102.0%	4.0	1.0	1.0	99.0%	40.0	9.2	10.0	92.0%	98.6%	No
34308	Sensus	2803 Coronado	1"	45323934	0.8	1.0	1.0	100.0%	4.0	1.0	1.0	97.1%	40.0	9.3	10.0	92.3%	96.9%	No
49958	Sensus	54 N Sky	1"	61808055	0.8	1.0	1.0	102.0%	4.0	1.0	1.0	100.0%	40.0	9.3	10.0	92.4%	99.3%	No
43378	Rockwell	16 Rio Bonita	1"	22605068	0.8	0.9	1.0	94.0%	4.0	1.0	1.0	96.1%	40.0	9.0	10.0	90.1%	94.8%	No
	Sensus	7 Rio Bonita	1"	21621065	0.8	1.0	1.0	101.0%	4.0	1.0	1.0	98.0%	40.0	9.2	10.0	92.2%	97.8%	No
42584	Sensus	123 W 3rd	1"	47952917	0.8	1.0	1.0	102.0%	4.0	1.0	1.0	99.0%	40.0	9.3	10.0	92.6%	98.7%	No
43130	Rockwell	1500 N Washington	1"	32666071	0.8	0.9	1.0	90.0%	4.0	1.0	1.0	98.0%	40.0	9.2	10.0	92.2%	95.6%	No
	Rockwell	1905 W 4th	1"	32666124	0.8	0.9	1.0	86.0%	4.0	1.0	1.0	98.0%	40.0	9.3	10.0	92.7%	94.8%	No
	Sensus	3100 N Montana	1"	48558013	0.8	1.0	1.0	102.0%	4.0	1.0	1.0	99.0%	40.0	9.3	10.0	93.1%	98.7%	No
19670	Rockwell	3008 N Montana	1"	40112723	0.8	0.8	1.0	85.0%	4.0	1.0	1.0	98.0%	40.0	7.8	10.0	77.6%	92.4%	No
14378	Sensus	1006 W College	1"	51811134	0.8	1.0	1.0	100.0%	4.0	1.0	1.0	101.0%	40.0	7.9	10.0	78.3%	97.4%	No
5560	Rockwell	1616 S Pennsylvania	1"	19360874	0.8	0.6	1.0	64.0%	4.0	0.9	1.0	90.2%	40.0	7.1	10.0	70.9%	82.1%	No
9624	Rockwell	919 N Delaware	1"	27018186	0.8	0.9	1.0	92.0%	4.0	1.0	1.0	97.1%	40.0	7.7	10.0	77.1%	93.1%	No
28408	Rockwell	1618 S Sunset	1"	30031587	0.8	0.8	1.0	83.0%	4.0	1.0	1.0	95.1%	40.0	8.7	10.0	86.3%	91.4%	No
65061	Sensus	1 Chrysler	1.5"	30160971	1.5	9.5	10.0	95.0%	8.0	10.0	10.0	100.0%	50.0	9.9	10.1	98.0%	98.7%	No
83195	Rockwell	113 S Missouri	1.5"	31664678	1.5	9.1	10.0	91.0%	8.0	9.8	10.0	98.0%	50.0	9.7	10.1	96.0%	96.3%	No
54457	Sensus	2601 W. Highland	1.5"	64290109	1.5	9.5	10.0	95.0%	8.0	9.4	10.0	94.0%	50.0	9.9	10.1	98.0%	94.8%	No
3647	Rockwell	705 Sherill	1.5"	29631030	1.5	8.4	10.0	84.0%	8.0	9.8	10.0	98.0%	50.0	9.6	10.1	95.0%	94.7%	No
2287	Rockwell	602 N Virginia	1.5"	N/A	1.5	8.2	10.0	82.0%	8.0	9.8	10.0	98.0%	50.0	9.7	10.1	96.0%	94.5%	No
8557	Neptune	1001 N Virigina	1.5"	60703032	1.5	9.7	10.0	97.0%	8.0	10.0	10.0	100.0%	50.0	9.9	10.1	98.0%	99.1%	No
106751	Rockwell	1200 Bomita	1.5"	31664601	1.5	9.0	10.0	90.0%	8.0	9.9	10.0	99.0%	50.0	9.9	10.1	98.0%	97.0%	No
113675	Sensus	2727 Wilshire	1.5"	31664714	1.5	9.3	10.0	93.0%	8.0	9.9	10.0	99.0%	50.0	9.9	10.1	98.0%	97.6%	No
100301	Sensus	2603 N Washington	1.5"	36776729	1.5	7.6	10.0	76.0%	8.0	9.6	10.0	96.0%	50.0	9.5	10.1	94.1%	91.7%	No
30819	Sensus	111 W Hobbs	1.5"	19281612	1.5	7.3	10.0	73.0%	8.0	9.5	10.0	95.0%	50.0	9.2	10.1	91.1%	90.0%	No
	Rockwell	909 N Virginia	1.5"	36776636	1.5	8.3	10.0	83.0%	8.0	9.7	10.0	97.0%	50.0	9.7	10.1	96.0%	94.0%	No
35675	Rockwell	1301 Meadow	1.5"	23475562	1.5	9.5	10.0	95.0%	8.0	9.4	10.0	94.0%	50.0	9.4	10.1	93.1%	94.0%	No
131045	Rockwell	221 E Chisum	1.5"	28151604	1.5	8.8	10.0	88.0%	8.0	9.8	10.0	98.0%	50.0	9.7	10.1	96.0%	95.7%	No
40639	Rockwell	608 Gary	1.5"	28966568	1.5	8.5	10.0	85.0%	8.0	9.7	10.0	97.0%	50.0	9.7	10.1	96.0%	94.4%	No
43149	Neptune	1902 S Richardson	1.5"	60703036	1.5	9.9	10.0	99.0%	8.0	10.0	10.0	100.0%	50.0	10.0	10.1	99.0%	99.6%	No
130375	Sensus	603 S Pennsylvania	1.5"	47167985	1.5	8.7	10.0	87.0%	8.0	9.7	10.0	97.0%	50.0	9.6	10.1	95.0%	94.7%	No
94029	Rockwell	1401 Highland	1.5"	30160868	1.5	0.3	10.0	3.0%	8.0	0.4	10.0	4.0%	50.0	0.0	10.1	0.0%	3.2%	Yes
119019	Sensus	400 N Missouri	2"	33574297	2.0	9.4	10.0	94.0%	15.0	9.4	10.1	93.1%	100.0	9.8	10.2	96.2%	93.7%	No
2831	Sensus	1722 N Montana Ave	2"	51338358	2.0	9.5	10.0	95.0%	15.0	9.6	10.1	95.0%	100.0	9.8	10.2	96.2%	95.2%	No
20129	Rockwell	512 N Missouri	2"	33574280	2.0	8.9	10.0	89.0%	15.0	9.2	10.1	91.1%	100.0	9.8	10.2	96.2%	91.4%	No
5676	Badger	504 N Kentucky	2"	12069397	2.0	9.8	10.0	98.0%	15.0	9.4	10.1	93.1%	100.0	10.0	10.2	98.1%	94.8%	No
111049	Sensus	102 N Pennsylvania	2"	53315710	2.0	0.0	10.0	0.0%	15.0	9.2	10.1	91.1%	100.0	8.3	10.2	81.5%	71.4%	No
7067	Rockwell	701 N Lea Ave.	2"	36705204	2.0	0.1	10.0	1.0%	15.0	9.6	10.1	95.0%	100.0	10.0	10.2	98.1%	76.7%	No
8353	Sensus	213 N Missouri	2"	27778136	2.0	0.0	10.0	0.0%	15.0	9.6	10.1	95.0%	100.0	9.9	10.2	97.2%	76.4%	No
2831	Sensus	1720 N Montana	2"	21066840	2.0	8.6	10.0	86.0%	15.0	9.7	10.1	96.0%	100.0	9.9	10.2	97.2%	94.2%	No
7841	Rockwell	312 N Missouri	2"	36705228	2.0	9.2	10.0	92.0%	15.0	9.8	10.1	97.0%	100.0	10.0	10.2	98.1%	96.2%	No
97101	Rockwell	700 N Kentucky	2"	31411999	2.0	0.3	10.0	3.0%	15.0	9.7	10.1	96.0%	100.0	10.0	10.2	98.1%	77.7%	No
102941	Rockwell	706 N Kentucky	2"	29768147	2.0	0.0	10.0	0.0%	15.0	9.6	10.1	95.0%	100.0	10.0	10.2	98.1%	76.5%	No
27428	Sensus	1501 W 7th	2"	N/A	2.0	9.7	10.0	97.0%	15.0	7.7	10.1	76.2%	100.0	9.9	10.2	97.2%	83.5%	No
47508	Rockwell	2905 N Main	2"	N/A	2.0	9.9	10.0	98.9%	15.0	10.0	10.1	99.0%	100.0	10.0	10.2	98.1%	98.9%	No
	Badger	215 W 7th	2"	N/A	2.0	10.0	10.0	99.9%	15.0	7.7	10.1	76.2%	100.0	9.9	10.2	97.2%	84.1%	No
8728	Sensus	508 N Wyoming	2"	N/A	2.0	4.1	10.0	41.0%	15.0	7.6	10.1	75.2%	100.0	10.0	10.2	98.1%	71.8%	No
17244	Rockwell	415 N Missouri	2"	N/A	2.0	9.1	10.0	90.9%	15.0	7.6	10.1	75.2%	100.0	9.7	10.2	95.2%	81.4%	No
5404	Rockwell	712 N Lea	2"	N/A	2.0	5.5	10.0	54.5%	15.0	7.7	10.1	76.2%	100.0	9.8	10.2	96.2%	74.9%	No

Average	95.7%
Average Omitting Outliers	95.7%
Average	90.0%
Average Omitting Outliers	95.4%
Average	84.6%
Average Omitting Outliers	84.6%

					Weighted Factor:							Min.	Inter.	Cross	Max.				
												20%	35%	25%	20%				
Account #	Make	Address	Size	Observed Serial #	Flow Rate (GPM)	Accuracy (%)	Flow Rate (GPM)	Meter Usage (Gal)	Test Usage (Gal)	Accuracy (%)	Flow Rate (GPM)	Meter Usage (Gal)	Test Usage (Gal)	Accuracy (%)	Flow Rate (GPM)	Meter Usage (Gal)	Test Usage (Gal)	Accuracy (%)	WAA %	Outlier?
127649	Rockwell	3609 S Main	4"	30846029	0.5	0.0%	3.0	0.7	1.0	71.6%	17.0	8.0	10.0	79.8%	300.0	203.0	200.5	101.3%	65.3%	No
100307	Rockwell	Millenium Transit	4"	1341824	0.5	31.0%	3.0	0.7	1.0	68.0%	17.0	8.0	10.1	79.2%	300.0	149.0	200.1	74.5%	64.7%	No
115917	Rockwell	4 Military Heights	4"	1503330	0.5	49.0%	3.0	0.9	1.0	94.7%	17.0	9.0	10.0	89.8%	300.0	202.0	200.2	100.9%	85.6%	No
132461	Sensus	2000 N Main St	4"	1426020	0.5	0.0%	3.0	0.0	1.0	0.0%	17.0	0.0	10.0	0.0%	300.0	0.0	201.0	0.0%	0.0%	no
81407	Sensus	1611 W Bland	4"	1503329	0.5	0.0%	3.0	0.0	1.0	0.0%	17.0	9.0	10.0	89.8%	300.0	192.0	200.5	95.8%	41.6%	no
N/A	Neptune	1407 E Berrendo D	4"	70268845	0.5	92.0%	3.0	1.0	1.0	96.0%	17.0	9.3	10.1	92.1%	300.0	194.2	200.8	96.7%	94.4%	No
124329	Sensus	1407 E Berrendo A	4"	67925020	0.5	61.0%	3.0	0.8	1.0	83.9%	17.0	9.0	10.0	89.8%	300.0	197.0	200.1	98.5%	83.7%	No
128045	Sensus	1407 E Berrendo B	4"	69264073	0.5	71.0%	3.0	0.7	1.0	64.4%	17.0	9.0	10.1	89.1%	300.0	190.0	200.1	95.0%	78.0%	No
126655	Sensus	1407 E Berrendo C	4"	29768147	0.5	84.0%	3.0	0.9	1.0	89.0%	17.0	9.0	10.0	90.0%	300.0	196.0	200.1	98.0%	90.0%	No

Average 67.0%
Average Omitting Outliers 67.0%

Appendix-H Calculation Summary

A.1 Billed Water Consumption

Meter Size	2014	2015	Baseline Avg.	% of Total
3/4"	$4,253,626	$4,282,282	$4,267,954	57.3%
1"	$1,003,221	$1,008,189	$1,005,705	13.5%
1 1/2"	$715,491	$760,030	$737,761	9.9%
2"	$776,385	$757,951	$767,168	10.3%
3"	$259,231	$261,092	$260,162	3.5%
4"	$330,054	$288,634	$309,344	4.2%
6"	$95,998	$88,900	$92,449	1.2%
8"	$1,886	$2,021	$1,954	0.0%
Total	**$7,435,892**	**$7,449,099**	**$7,442,496**	**100.0%**

A.2 Summary Water Consumption

Meter Size	2014	2015	Baseline Avg.	% of Total
3/4"	1,534,451	1,393,536	1,463,993	52.6%
1"	410,710	375,834	393,272	14.1%
1 1/2"	271,153	270,089	270,621	9.7%
2"	345,553	308,377	326,965	11.8%
3"	125,269	117,133	121,201	4.4%
4"	174,415	139,961	157,188	5.7%
6"	51,681	44,308	47,995	1.7%
8"	-	-	-	0.0%
Total	**2,913,231**	**2,649,237**	**2,781,234**	100.0%

A.3 Summary Water Consumption Above 3 kGal

Meter Size	2014	2015	Baseline Avg.	% of Total
3/4"	1,094,236	962,795	1,028,515	46.1%
1"	344,356	310,805	327,580	14.7%
1 1/2"	239,353	238,948	239,150	10.7%
2"	331,577	294,671	313,124	14.0%
3"	122,373	114,425	118,399	5.3%
4"	173,367	138,955	156,161	7.0%
6"	51,426	44,059	47,743	2.1%
8"	-	-	-	0.0%
Total	**2,356,688**	**2,104,659**	**2,230,673**	100.0%

A.4 Summary Actual Water Consumption with Existing Meter

Meter Size	Meter Accuracy	2014	2015	Baseline Avg.
3/4"	**86.8%**	1,768,365	1,605,968	1,687,167
1"	**95.7%**	429,123	392,683	410,903
1 1/2"	**95.4%**	284,151	283,036	283,593
2"	**84.6%**	408,269	364,347	386,308
3"	**67.0%**	186,888	174,749	180,818
4"	**67.0%**	260,209	208,806	234,507
6"	**67.0%**	77,102	66,103	71,603
8"	**67.0%**	-	-	-
	Grand Total	**3,414,106**	**3,095,692**	**3,254,899**

A.5 Summary Water Consumption with New Meter

Meter Size	Meter Accuracy	2014	2015	Baseline Avg.
3/4"	98.5%	1,741,840	1,581,878	1,661,859
1"	98.5%	422,686	386,793	404,739
1 1/2"	98.5%	279,888	278,790	279,339
2"	98.5%	402,145	358,882	380,513
3"	98.5%	184,084	172,128	178,106
4"	98.5%	256,306	205,674	230,990
6"	98.5%	75,946	65,112	70,529
8"	98.5%	-	-	-
	Grand Total	3,362,894	3,049,257	3,206,076

A.6 Summary New Meter Consumption above 3 kGal

Meter Size	2014	2015	Baseline Avg.
3/4"	1,294,159	1,142,826	1,218,493
1"	356,147	321,560	338,853
1 1/2"	248,002	247,555	247,778
2"	388,047	345,040	366,543
3"	181,154	169,387	175,271
4"	255,249	204,666	229,957
6"	75,691	64,863	70,277
8"	-	-	-
	2,798,449	2,495,896	2,647,172

A.7 Summary Delta in Meter CNS above 3 kGal

Meter Size	2014	2015	Baseline Avg.
3/4"	199,924	180,031	189,977
1"	11,791	10,755	11,273
1 1/2"	8,649	8,607	8,628
2"	56,470	50,368	53,419
3"	58,781	54,962	56,872
4"	81,882	65,710	73,796
6"	24,265	20,803	22,534
8"	-	-	-
	441,761	391,237	416,499

Appendix J-Economic Analysis

Cash Flow-16 Year Loan

Enter Data in Green

Project Cost	**$19,467,887**

Escalation	Rate
Water CNS year 1-2	**-7.0%**
Water CNS year 3-20	**-2.0%**
Sewer CNS	**-3.0%**
Small Meter Degradation	**-0.5%**
Large Meter Degradation	**-0.5%**
Billing Rate	**3.8%**
Interest	**2.0%**

Project Cost	$19,467,887
Project Total Savings	$1,698,001
Simple Payback	11.5

ROI

Total Revenue & Savings	$39,807,083
Investment	$25,961,282
ROI	53%

Year						0	1	2	3	4	5	6	7	8	9
Savings	A	A.1	Water Small Meter 3/4"-1 1/2"	Baseline CNS >3kGal	kGal		**209,878**	195,187	191,282.81	187,457	183,708	180,034	176,433	172,905	169,446
				Meter Degradation (Note-1)	kGal		-	-	-	-	-	-	-	-	-
				CNS	kGal		209,878	195,187	191,283	187,457	183,708	180,034	176,433	172,905	169,446
				Rate	$/kGal		**$1.96**	$2.03	$2.11	$2.19	$2.28	$2.36	$2.45	$2.54	$2.64
				Revenue	$		$ 411,361	$ 397,103	$ 403,949	$ 410,913	$ 417,997	$ 425,204	$ 432,534	$ 439,991	$ 447,577
		A.2	Water Large Meter 2"-8"	Baseline CNS >3kGal	kGal		**206,621**	192,157.53	188,314	184,548	180,857	177,240	173,695	170,221	166,817
				Meter Degradation (Note-2)	kGal		-	-	-	-	-	(886)	(868)	(851)	(834)
				CNS	kGal		206,621	192,158	188,314	184,548	180,857	176,354	172,827	169,370	165,983
				Rate	$/kGal		**$1.96**	$2.03	$2.11	$2.19	$2.28	$2.36	$2.45	$2.54	$2.64
				Revenue	$		$ 404,977	$ 390,941	$ 397,680	$ 404,536	$ 411,511	$ 416,512	$ 423,693	$ 430,997	$ 438,428
		A.3	Water Total A.1+A.2	CNS Total	kGal		416,499	387,344	379,597	372,005	364,565	357,274	350,128	343,126	336,263
				Revenue Total	$		$ 816,338	$ 788,044	$ 801,630	$ 815,450	$ 829,508	$ 841,716	$ 856,227	$ 870,988	$ 886,004
	B	B.1	Sewer Small Meter 3/4"-1 1/2"	Baseline CNS	kGal		**127,265**	123,447	119,744	116,151	112,667	109,287	106,008	102,828	99,743
				Meter Degradation (Note-1)	kGal		-	-	-	-	-				
				CNS	kGal		127,265	123,447	119,744	116,151	112,667	109,287	106,008	102,828	99,743
				Rate	$/kGal		**$ 1**	$ 1	$ 2	$ 2	$ 2	$ 2	$ 2	$ 2	$ 2
				Revenue	$		$ 183,262	$ 184,519	$ 185,785	$ 187,059	$ 188,342	$ 189,634	$ 190,935	$ 192,245	$ 193,564
		B.2	Sewer Large Meter 2"-8"	Baseline CNS	kGal		**112,411**	109,039	105,768	102,594	99,517	96,531	93,635	90,826	88,101
				Meter Degradation (Note-2)	kGal		-	-	-	-	-	(483)	(468)	(454)	(441)
				CNS	kGal		112,411	109,039	105,768	102,594	99,517	96,048	93,167	90,372	87,661
				Rate	$/kGal		**$ 1.44**	$ 1.49	$ 1.55	$ 1.61	$ 1.67	$ 1.74	$ 1.80	$ 1.87	$ 1.94
				Revenue	$		$ 161,872	$ 162,982	$ 164,100	$ 165,226	$ 166,360	$ 166,663	$ 167,807	$ 168,958	$ 170,117
		B.3	Sewer Total B.1+B.2	CNS Total	kGal		239,676	232,486	225,511	218,746	212,183	205,818	199,643	193,654	187,844
				Revenue Total	$		$ 345,133	$ 347,501	$ 349,885	$ 352,285	$ 354,702	$ 356,298	$ 358,742	$ 361,203	$ 363,681
	C		O&M	First five Yrs.	$		**$ 536,530**	$ 556,918	$ 578,081	$ 600,048	$ 622,850	$ 646,518	$ 671,086	$ 696,587	$ 723,058
				Large Meter Replacement	$							$ (75,312)	$ (78,174)	$ (81,145)	$ (84,228)
			O&M Total	Savings	$		$ 536,530	$ 556,918	$ 578,081	$ 600,048	$ 622,850	$ 571,206	$ 592,912	$ 615,442	$ 638,829
	D		**A+B+C**	**Total Revenue & Savings**	$		**$ 1,698,001**	**$ 1,692,463**	**$ 1,729,596**	**$ 1,767,783**	**$ 1,807,060**	**$ 1,769,219**	**$ 1,807,880**	**$ 1,847,633**	**$ 1,888,514**
Cost	E	E.1	**From 016-Simple**	(update Loan Schedule years)	Payment		1	2	3	4	5	6	7	8	9
		E.3		Beginning Balance		$ 19,857,245	$ 19,857,245	$ 18,791,901	$ 17,705,251	$ 16,596,867	$ 15,466,316	$ 14,313,153	$ 13,136,928	$ 11,937,178	$ 10,713,433
		E.4		Payment			$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489
		E.5		Principal			$ 1,065,344	$ 1,086,651	$ 1,108,384	$ 1,130,551	$ 1,153,162	$ 1,176,226	$ 1,199,750	$ 1,223,745	$ 1,248,220
		E.6		Interest			$ 397,145	$ 375,838	$ 354,105	$ 331,937	$ 309,326	$ 286,263	$ 262,739	$ 238,744	$ 214,269
				Ending Balance		$ 19,857,245	**$ 18,791,901**	**$ 17,705,251**	**$ 16,596,867**	**$ 15,466,316**	**$ 14,313,153**	**$ 13,136,928**	**$ 11,937,178**	**$ 10,713,433**	**$ 9,465,213**
	F		M&V	Cost	$		**$ 50,000**	$ 51,900	$ 53,872	$ 55,919	$ 58,044	$ 60,250	$ 62,539	$ 64,916	$ 67,383
	G		Annual System Maintenance	Cost	$		**$ 51,000**	$ 52,938	$ 54,950	$ 57,038	$ 59,205	$ 61,455	$ 63,790	$ 66,214	$ 68,730
	H		**E.4+F+G**	**Total Annual Cost**			**$ 1,563,489**	**$ 1,567,327**	**$ 1,571,310**	**$ 1,575,446**	**$ 1,579,738**	**$ 1,584,193**	**$ 1,588,818**	**$ 1,593,619**	**$ 1,598,602**
Cash Flow	I		H-D	Project Cash Flow		$ (19,857,245)	**$ (17,194,900)**	**$ (16,117,626)**	**$ (14,976,093)**	**$ (13,811,490)**	**$ (12,623,343)**	**$ (11,489,414)**	**$ (10,255,627)**	**$ (8,996,930)**	**$ (7,712,812)**
			D-(E.4+F+G)	Annual Positive Cash Flow			**$ 134,513**	**$ 125,136**	**$ 158,285**	**$ 192,337**	**$ 227,322**	**$ 185,026**	**$ 219,062**	**$ 254,014**	**$ 289,912**
Year						0	1	2	3	4	5	6	7	8	9

Note-1: YESCO has anticipated meter dedrigation starting year 11
Note-2 YESCO has anticipated meter dedrigation starting year 6

Cash Flow-16 Year Loan

Year						10	11	12	13	14	15	16	17	18	19	20	Total
Savings	A	A.1	Water Small Meter 3/4"-1 1/2"	Baseline CNS >3kGal	kGal	166,057	162,736	159,482	156,292	153,166	150,103	147,101	144,159	141,276	138,450	135,681	
				Meter Degradation (Note-1)	kGal	-	(814)	(797)	(781)	(766)	(751)	(736)	(721)	(706)	(692)	(678)	
				CNS	kGal	166,057	161,923	158,684	155,511	152,400	149,352	146,365	143,438	140,569	137,758	135,003	
				Rate	$/kGal	$2.74	$2.85	$2.95	$3.07	$3.18	$3.30	$3.43	$3.56	$3.69	$3.84	$3.98	
				Revenue	$	$ 455,293	$ 460,826	$ 468,771	$ 476,853	$ 485,073	$ 493,436	$ 501,943	$ 510,596	$ 519,399	$ 528,354	$ 537,462	
		A.2	Water Large Meter 2"-8"	Baseline CNS >3kGal	kGal	163,481	160,211	157,007	153,867	150,789	147,773	144,818	141,922	139,083	136,302	133,575	
				Meter Degradation (Note-2)	kGal	(817)	(801)	(785)	(769)	(754)	(739)	(724)	(710)	(695)	(682)	(668)	
				CNS	kGal	162,663	159,410	156,222	153,097	150,035	147,035	144,094	141,212	138,388	135,620	132,908	
				Rate	$/kGal	$2.74	$2.85	$2.95	$3.07	$3.18	$3.30	$3.43	$3.56	$3.69	$3.84	$3.98	
				Revenue	$	$ 445,986	$ 453,675	$ 461,496	$ 469,452	$ 477,546	$ 485,779	$ 494,154	$ 502,673	$ 511,339	$ 520,154	$ 529,122	
		A.3	Water Total A.1+A.2	CNS Total	kGal	329,538	322,947	316,488	310,159	303,955	297,876	291,919	286,080	280,359	274,752	269,257	
				Revenue Total	$	$ 901,279	$ 914,501	$ 930,267	$ 946,305	$ 962,619	$ 979,215	$ 996,097	$ 1,013,269	$ 1,030,738	$ 1,048,508	$ 1,066,584	
	B	B.1	Sewer Small Meter 3/4"-1 1/2"	Baseline CNS	kGal	96,751	93,848	91,033	88,302	85,653	83,083	80,591	78,173	75,828	73,553	71,346	
				Meter Degradation (Note-1)	kGal		(469)	(455)	(442)	(428)	(415)	(403)	(391)	(379)	(368)	(357)	
				CNS	kGal	96,751	93,379	90,578	87,860	85,225	82,668	80,188	77,782	75,449	73,185	70,990	
				Rate	$/kGal	$ 2	$ 2	$ 2	$ 2	$ 2	$ 2	$ 3	$ 3	$ 3	$ 3	$ 3	
				Revenue	$	$ 194,892	$ 195,247	$ 196,587	$ 197,935	$ 199,293	$ 200,660	$ 202,037	$ 203,423	$ 204,818	$ 206,223	$ 207,638	
		B.2	Sewer Large Meter 2"-8"	Baseline CNS	kGal	85,458	82,895	80,408	77,996	75,656	73,386	71,184	69,049	66,977	64,968	63,019	
				Meter Degradation (Note-2)	kGal	(427)	(414)	(402)	(390)	(378)	(367)	(356)	(345)	(335)	(325)	(315)	
				CNS	kGal	85,031	82,480	80,006	77,606	75,277	73,019	70,828	68,704	66,643	64,643	62,704	
				Rate	$/kGal	$ 2.01	$ 2.09	$ 2.17	$ 2.25	$ 2.34	$ 2.43	$ 2.52	$ 2.62	$ 2.71	$ 2.82	$ 2.92	
				Revenue	$	$ 171,284	$ 172,459	$ 173,642	$ 174,833	$ 176,032	$ 177,240	$ 178,456	$ 179,680	$ 180,913	$ 182,154	$ 183,403	
		B.3	Sewer Total B.1+B.2	CNS Total	kGal	182,209	176,743	171,441	166,297	161,308	156,469	151,775	147,222	142,805	138,521	134,365	
				Revenue Total	$	$ 366,175	$ 367,706	$ 370,229	$ 372,768	$ 375,326	$ 377,900	$ 380,493	$ 383,103	$ 385,731	$ 388,377	$ 391,041	
	C		O&M	First five Yrs.	$	$ 750,534	$ 779,054	$ 808,658	$ 839,387	$ 871,284	$ 904,393	$ 938,759	$ 974,432	$ 1,011,461	$ 1,049,896	$ 1,089,792	
				Large Meter Replacement	$	$ (87,429)	$ (90,751)	$ (94,200)	$ (97,780)	$ (101,495)	$ (105,352)	$ (109,355)	$ (113,511)	$ (117,824)	$ (122,302)	$ (126,949)	
			O&M Total	Savings	$	$ 663,105	$ 688,303	$ 714,458	$ 741,607	$ 769,789	$ 799,040	$ 829,404	$ 860,921	$ 893,636	$ 927,595	$ 962,843	
	D		**A+B+C**	**Total Revenue & Savings**	$	**$ 1,930,559**	**$ 1,970,510**	**$ 2,014,954**	**$ 2,060,681**	**$ 2,107,733**	**$ 2,156,156**	**$ 2,205,993**	**$ 2,257,294**	**$ 2,310,105**	**$ 2,364,480**	**$ 2,420,469**	**$ 39,807,083**
Cost	E	E.1	**From 016-Simple**	(update Loan Schedule years)	Payment	10	11	12	13	14	15	16					
		E.3		Beginning Balance		$ 9,465,213	$ 8,192,029	$ 6,893,381	$ 5,568,760	$ 4,217,646	$ 2,839,511	$ 1,433,812					
		E.4		Payment		$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489	$ 1,462,489					$ 23,399,817
		E.5		Principal		$ 1,273,184	$ 1,298,648	$ 1,324,621	$ 1,351,113	$ 1,378,136	$ 1,405,698	$ 1,405,136					
		E.6		Interest		$ 189,304	$ 163,841	$ 137,868	$ 111,375	$ 84,353	$ 56,790	$ 28,676					
				Ending Balance		**$ 8,192,029**	**$ 6,893,381**	**$ 5,568,760**	**$ 4,217,646**	**$ 2,839,511**	**$ 1,433,812**	**$ -**					
	F		M&V	Cost	$	$ 69,943	$ 72,601	$ 75,360	$ 78,224	$ 81,196	$ 84,282	$ 87,484		$ -	$ -	$ -	$ 1,073,914
	G		Annual System Maintenance	Cost	$	$ 71,342	$ 74,053	$ 76,867	$ 79,788	$ 82,820	$ 85,967	$ 89,234	$ 92,625	$ 96,145	$ 99,798	$ 103,590	$ 1,487,551
	H		**E.4+F+G**	**Total Annual Cost**		**$ 1,603,774**	**$ 1,609,143**	**$ 1,614,716**	**$ 1,620,500**	**$ 1,626,505**	**$ 1,632,737**	**$ 1,639,207**	**$ 92,625**	**$ 96,145**	**$ 99,798**	**$ 103,590**	**$ 25,961,282**
Cash Flow	I		H-D	Project Cash Flow		**$ (6,402,755)**	**$ (5,069,525)**	**$ (3,706,033)**	**$ (2,314,977)**	**$ (895,793)**	**$ 552,095**	**$ 2,029,275**	**$ 2,164,669**	**$ 2,213,961**	**$ 2,264,681**	**$ 2,316,878**	
			D-(E.4+F+G)	Annual Positive Cash Flow		**$ 326,785**	**$ 361,367**	**$ 400,238**	**$ 440,180**	**$ 481,229**	**$ 523,418**	**$ 566,786**	**$ 2,164,669**	**$ 2,213,961**	**$ 2,264,681**	**$ 2,316,878**	**$ 13,845,801**
									$3,314,178							**$13,845,801**	
Year						10	11	12	13	14	15	16	17	18	19	20	Total

Note-1: YESCO has anticipated meter dedrigation starting year 11
Note-2 YESCO has anticipated meter dedrigation starting year 6

LOAN AMORTIZATION SCHEDULE

ENTER VALUES	
Loan amount	$19,857,244.74
Annual interest rate	2.00%
Loan period in years	16
Number of payments per year	1
Start date of loan	1/1/2016
Optional extra payments	$ -

LOAN SUMMARY	
Scheduled payment	$1,462,488.57
Scheduled number of payments	16
Actual number of payments	16
Total early payments	$17,300.00
Total interest	$248,196.12
LENDER NAME	TBD

PMT NO	PAYMENT DATE	BEGINNING BALANCE	SCHEDULED PAYMENT	EXTRA PAYMENT	TOTAL PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	CUMULATIVE INTEREST
1	1/1/2016	$19,857,244.74	$1,462,488.57	$0.00	$1,462,488.57	$1,065,343.68	$397,144.89	$18,791,901.06	$397,144.89
2	2/1/2016	$18,791,901.06	$1,462,488.57	$0.00	$1,462,488.57	$1,086,650.55	$375,838.02	$17,705,250.51	$772,982.92
3	3/1/2016	$17,705,250.51	$1,462,488.57	$0.00	$1,462,488.57	$1,108,383.56	$354,105.01	$16,596,866.94	$1,127,087.93
4	4/1/2016	$16,596,866.94	$1,462,488.57	$0.00	$1,462,488.57	$1,130,551.24	$331,937.34	$15,466,315.71	$1,459,025.26
5	5/1/2016	$15,466,315.71	$1,462,488.57	$0.00	$1,462,488.57	$1,153,162.26	$309,326.31	$14,313,153.45	$1,768,351.58
6	6/1/2016	$14,313,153.45	$1,462,488.57	$0.00	$1,462,488.57	$1,176,225.51	$286,263.07	$13,136,927.94	$2,054,614.65
7	7/1/2016	$13,136,927.94	$1,462,488.57	$0.00	$1,462,488.57	$1,199,750.02	$262,738.56	$11,937,177.93	$2,317,353.21
8	8/1/2016	$11,937,177.93	$1,462,488.57	$0.00	$1,462,488.57	$1,223,745.02	$238,743.56	$10,713,432.91	$2,556,096.77
9	9/1/2016	$10,713,432.91	$1,462,488.57	$0.00	$1,462,488.57	$1,248,219.92	$214,268.66	$9,465,212.99	$2,770,365.42
10	10/1/2016	$9,465,212.99	$1,462,488.57	$0.00	$1,462,488.57	$1,273,184.31	$189,304.26	$8,192,028.68	$2,959,669.68
11	11/1/2016	$8,192,028.68	$1,462,488.57	$0.00	$1,462,488.57	$1,298,648.00	$163,840.57	$6,893,380.68	$3,123,510.26
12	12/1/2016	$6,893,380.68	$1,462,488.57	$0.00	$1,462,488.57	$1,324,620.96	$137,867.61	$5,568,759.72	$3,261,377.87
13	1/1/2017	$5,568,759.72	$1,462,488.57	$0.00	$1,462,488.57	$1,351,113.38	$111,375.19	$4,217,646.34	$3,372,753.06
14	2/1/2017	$4,217,646.34	$1,462,488.57	$0.00	$1,462,488.57	$1,378,135.65	$84,352.93	$2,839,510.69	$3,457,105.99
15	3/1/2017	$2,839,510.69	$1,462,488.57	$0.00	$1,462,488.57	$1,405,698.36	$56,790.21	$1,433,812.33	$3,513,896.21
16	4/1/2017	$1,433,812.33	$1,462,488.57	$0.00	$1,433,812.33	$1,405,136.08	$28,676.25	$0.00	$3,542,572.45

Cash Flow-20 Year Loan

Cash Flow-20 Year Loan

Enter Data in Green

Project Cost	$19,467,887

Escalation	Rate
Water CNS year 1-2	-7.0%
Water CNS year 3-20	-2.0%
Sewer CNS	-3.0%
Small Meter Degradation	-0.5%
Large Meter Degradation	-0.5%
Billing Rate	3.8%
Interest	2.0%

Project Cost	$19,467,887
Project Total Savings	$1,698,001
SPB	11.5

Year						0	1	2	3	4	5	6	7	8	9
Savings	A	A.1	Water	Baseline CNS >3kGal	kGal		**209,878**	195,186.54	191,283	187,457	183,708	180,034	176,433	172,905	169,446
			Small Meter	Meter Degradation	kGal		-	-	-	-	-	-	-	-	-
			3/4"-1 1/2"	CNS	kGal		209,878	195,187	191,283	187,457	183,708	180,034	176,433	172,905	169,446
				Rate	$/kGal		**$1.96**	$2.03	$2.11	$2.19	$2.28	$2.36	$2.45	$2.54	$2.64
				Revenue	$		$ 411,361	$ 397,103	$ 403,949	$ 410,913	$ 417,997	$ 425,204	$ 432,534	$ 439,991	$ 447,577
		A.2	Water	Baseline CNS >3kGal	kGal		**206,621**	192,158	188,314.38	184,548	180,857	177,240	173,695	170,221	166,817
			Large Meter	Meter Degradation	kGal		-	-	-	-	-	(886)	(868)	(851)	(834)
			2"-8"	CNS	kGal		206,621	192,158	188,314	184,548	180,857	176,354	172,827	169,370	165,983
				Rate	$/kGal		**$1.96**	$2.03	$2.11	$2.19	$2.28	$2.36	$2.45	$2.54	$2.64
				Revenue	$		$ 404,977	$ 390,941	$ 397,680	$ 404,536	$ 411,511	$ 416,512	$ 423,693	$ 430,997	$ 438,428
		A.3	Water Total	CNS Total	kGal		416,499	387,344	379,597	372,005	364,565	357,274	350,128	343,126	336,263
			A.1+A.2	Revenue Total	$		$ 816,338	$ 788,044	$ 801,630	$ 815,450	$ 829,508	$ 841,716	$ 856,227	$ 870,988	$ 886,004
	B	B.1	Sewer	Baseline CNS	kGal		**127,265**	123,447	119,744	116,151	112,667	109,287	106,008	102,828	99,743
			Small Meter	Meter Degradation	kGal		-	-	-	-	-	-	-	-	-
			3/4"-1 1/2"	CNS	kGal		127,265	123,447	119,744	116,151	112,667	109,287	106,008	102,828	99,743
				Rate	$/kGal		**$ 1**	$ 1	$ 2	$ 2	$ 2	$ 2	$ 2	$ 2	$ 2
				Revenue	$		$ 183,262	$ 184,519	$ 185,785	$ 187,059	$ 188,342	$ 189,634	$ 190,935	$ 192,245	$ 193,564
		B.2	Sewer	Baseline CNS	kGal		**112,411**	109,039	105,768	102,594	99,517	96,531	93,635	90,826	88,101
			Large Meter	Meter Degradation	kGal		-	-	-	-	-	(483)	(468)	(454)	(441)
			2"-8"	CNS	kGal		112,411	109,039	105,768	102,594	99,517	96,048	93,167	90,372	87,661
				Rate	$/kGal		**$ 1.44**	$ 1.49	$ 1.55	$ 1.61	$ 1.67	$ 1.74	$ 1.80	$ 1.87	$ 1.94
				Revenue	$		$ 161,872	$ 162,982	$ 164,100	$ 165,226	$ 166,360	$ 166,663	$ 167,807	$ 168,958	$ 170,117
		B.3	Sewer Total	CNS Total	kGal		239,676	232,486	225,511	218,746	212,183	205,818	199,643	193,654	187,844
			B.1+B.2	Revenue Total	$		$ 345,133	$ 347,501	$ 349,885	$ 352,285	$ 354,702	$ 356,298	$ 358,742	$ 361,203	$ 363,681
	C		O&M	First five Yrs.	$		**$ 536,530**	$ 556,918	$ 578,081	$ 600,048	$ 622,850	$ 646,518	$ 671,086	$ 696,587	$ 723,058
				Large Meter Replacement	$							$ (75,312)	$ (78,174)	$ (81,145)	$ (84,228)
			O&M Total	Savings	$		$ 536,530	$ 556,918	$ 578,081	$ 600,048	$ 622,850	$ 571,206	$ 592,912	$ 615,442	$ 638,829
	D		**A+B+C**	**Total Revenue & Savings**	$		**$ 1,698,001**	**$ 1,692,463**	**$ 1,729,596**	**$ 1,767,783**	**$ 1,807,060**	**$ 1,769,219**	**$ 1,807,880**	**$ 1,847,633**	**$ 1,888,514**
Cost	E	E.1	**From 016-Simple**	(update Loan Schedule years)	Payment		1	2	3	4	5	6	7	8	9
		E.3		Beginning Balance		$ 19,857,245	$ 19,857,245	$ 19,039,986	$ 18,206,382	$ 17,356,105	$ 16,488,823	$ 15,604,196	$ 14,701,876	$ 13,781,510	$ 12,842,736
		E.4		Payment			$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404
		E.5		Principal			$ 817,259	$ 833,604	$ 850,276	$ 867,282	$ 884,627	$ 902,320	$ 920,366	$ 938,774	$ 957,549
		E.6		Interest			$ 397,145	$ 380,800	$ 364,128	$ 347,122	$ 329,776	$ 312,084	$ 294,038	$ 275,630	$ 256,855
				Ending Balance		$ 19,857,245	**$ 19,039,986**	**$ 18,206,382**	**$ 17,356,105**	**$ 16,488,823**	**$ 15,604,196**	**$ 14,701,876**	**$ 13,781,510**	**$ 12,842,736**	**$ 11,885,187**
	F		M&V	Cost	$		**$ 50,000**	$ 51,900	$ 53,872	$ 55,919	$ 58,044	$ 60,250	$ 62,539	$ 64,916	$ 67,383
	G		Annual System Maintenance	Cost	$		**$ 51,000**	$ 52,938	$ 54,950	$ 57,038	$ 59,205	$ 61,455	$ 63,790	$ 66,214	$ 68,730
	H		**E.4+F+G**	**Total Annual Cost**			**$ 1,315,404**	**$ 1,319,242**	**$ 1,323,226**	**$ 1,327,361**	**$ 1,331,653**	**$ 1,336,109**	**$ 1,340,734**	**$ 1,345,534**	**$ 1,350,517**
Cash Flow	I		H-D	Project Cash Flow		$ (19,857,245)	**$ (17,442,984)**	**$ (16,618,757)**	**$ (15,735,331)**	**$ (14,833,998)**	**$ (13,914,386)**	**$ (13,054,362)**	**$ (12,099,959)**	**$ (11,126,233)**	**$ (10,132,786)**
			D-(E.4+F+G)	Annual Positive Cash Flow			**$ 382,598**	**$ 373,221**	**$ 406,370**	**$ 440,422**	**$ 475,406**	**$ 433,110**	**$ 467,147**	**$ 502,099**	**$ 537,997**
Year						**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**

Note-1: YESCO has anticipated meter dedrigation starting year 11
Note-2 YESCO has anticipated meter dedrigation starting year 6

Cash Flow-20 Year Loan

Cash Flow-20 Year Loan

Year						10	11	12	13	14	15	16	17	18	19	20
Savings	A	A.1	Water Small Meter 3/4"-1 1/2"	Baseline CNS >3kGal	kGal	166,057	162,736	159,482	156,292	153,166	150,103	147,101	144,159	141,276	138,450	135,681
				Meter Degradation	kGal	-	(814)	(797)	(781)	(766)	(751)	(736)	(721)	(706)	(692)	(678)
				CNS	kGal	166,057	161,923	158,684	155,511	152,400	149,352	146,365	143,438	140,569	137,758	135,003
				Rate	$/kGal	$2.74	$2.85	$2.95	$3.07	$3.18	$3.30	$3.43	$3.56	$3.69	$3.84	$3.98
				Revenue	$	$ 455,293	$ 460,826	$ 468,771	$ 476,853	$ 485,073	$ 493,436	$ 501,943	$ 510,596	$ 519,399	$ 528,354	$ 537,462
		A.2	Water Large Meter 2"-8"	Baseline CNS >3kGal	kGal	163,481	160,211	157,007	153,867	150,789	147,773	144,818	141,922	139,083	136,302	133,575
				Meter Degradation	kGal	(817)	(801)	(785)	(769)	(754)	(739)	(724)	(710)	(695)	(682)	(668)
				CNS	kGal	162,663	159,410	156,222	153,097	150,035	147,035	144,094	141,212	138,388	135,620	132,908
				Rate	$/kGal	$2.74	$2.85	$2.95	$3.07	$3.18	$3.30	$3.43	$3.56	$3.69	$3.84	$3.98
				Revenue	$	$ 445,986	$ 453,675	$ 461,496	$ 469,452	$ 477,546	$ 485,779	$ 494,154	$ 502,673	$ 511,339	$ 520,154	$ 529,122
		A.3	Water Total A.1+A.2	CNS Total	kGal	329,538	322,947	316,488	310,159	303,955	297,876	291,919	286,080	280,359	274,752	269,257
				Revenue Total	$	$ 901,279	$ 914,501	$ 930,267	$ 946,305	$ 962,619	$ 979,215	$ 996,097	$ 1,013,269	$ 1,030,738	$ 1,048,508	$ 1,066,584
	B	B.1	Sewer Small Meter 3/4"-1 1/2"	Baseline CNS	kGal	96,751	93,848	91,033	88,302	85,653	83,083	80,591	78,173	75,828	73,553	71,346
				Meter Degradation	kGal		(469)	(455)	(442)	(428)	(415)	(403)	(391)	(379)	(368)	(357)
				CNS	kGal	96,751	93,379	90,578	87,860	85,225	82,668	80,188	77,782	75,449	73,185	70,990
				Rate	$/kGal	$ 2	$ 2	$ 2	$ 2	$ 2	$ 2	$ 3	$ 3	$ 3	$ 3	$ 3
				Revenue	$	$ 194,892	$ 195,247	$ 196,587	$ 197,935	$ 199,293	$ 200,660	$ 202,037	$ 203,423	$ 204,818	$ 206,223	$ 207,638
		B.2	Sewer Large Meter 2"-8"	Baseline CNS	kGal	85,458	82,895	80,408	77,996	75,656	73,386	71,184	69,049	66,977	64,968	63,019
				Meter Degradation	kGal	(427)	(414)	(402)	(390)	(378)	(367)	(356)	(345)	(335)	(325)	(315)
				CNS	kGal	85,031	82,480	80,006	77,606	75,277	73,019	70,828	68,704	66,643	64,643	62,704
				Rate	$/kGal	$ 2.01	$ 2.09	$ 2.17	$ 2.25	$ 2.34	$ 2.43	$ 2.52	$ 2.62	$ 2.71	$ 2.82	$ 2.92
				Revenue	$	$ 171,284	$ 172,459	$ 173,642	$ 174,833	$ 176,032	$ 177,240	$ 178,456	$ 179,680	$ 180,913	$ 182,154	$ 183,403
		B.3	Sewer Total B.1+B.2	CNS Total	kGal	182,209	176,743	171,441	166,297	161,308	156,469	151,775	147,222	142,805	138,521	134,365
				Revenue Total	$	$ 366,175	$ 367,706	$ 370,229	$ 372,768	$ 375,326	$ 377,900	$ 380,493	$ 383,103	$ 385,731	$ 388,377	$ 391,041
	C		O&M	First five Yrs.	$	$ 750,534	$ 779,054	$ 808,658	$ 839,387	$ 871,284	$ 904,393	$ 938,759	$ 974,432	$ 1,011,461	$ 1,049,896	$ 1,089,792
				Large Meter Replacement	$	$ (87,429)	$ (90,751)	$ (94,200)	$ (97,780)	$ (101,495)	$ (105,352)	$ (109,355)	$ (113,511)	$ (117,824)	$ (122,302)	$ (126,949)
			O&M Total	Savings	$	$ 663,105	$ 688,303	$ 714,458	$ 741,607	$ 769,789	$ 799,040	$ 829,404	$ 860,921	$ 893,636	$ 927,595	$ 962,843
	D		**A+B+C**	**Total Revenue & Savings**	$	**$ 1,930,559**	**$ 1,970,510**	**$ 2,014,954**	**$ 2,060,681**	**$ 2,107,733**	**$ 2,156,156**	**$ 2,205,993**	**$ 2,257,294**	**$ 2,310,105**	**$ 2,364,480**	**$ 2,420,469**
Cost	E	E.1	**From 016-Simple**	(update Loan Schedule years)	Payment	10	11	12	13	14	15	16	17	18	19	20
		E.3		Beginning Balance		$ 11,885,187	$ 10,908,486	$ 9,912,252	$ 8,896,093	$ 7,859,611	$ 6,802,400	$ 5,724,044	$ 4,624,121	$ 3,502,199	$ 2,357,839	$ 1,190,592
		E.4		Payment		$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404	$ 1,214,404
		E.5		Principal		$ 976,700	$ 996,234	$ 1,016,159	$ 1,036,482	$ 1,057,212	$ 1,078,356	$ 1,099,923	$ 1,121,922	$ 1,144,360	$ 1,167,247	$ 1,166,780
		E.6		Interest		$ 237,704	$ 218,170	$ 198,245	$ 177,922	$ 157,192	$ 136,048	$ 114,481	$ 92,482	$ 70,044	$ 47,157	$ 23,812
				Ending Balance		**$ 10,908,486**	**$ 9,912,252**	**$ 8,896,093**	**$ 7,859,611**	**$ 6,802,400**	**$ 5,724,044**	**$ 4,624,121**	**$ 3,502,199**	**$ 2,357,839**	**$ 1,190,592**	**$ 1,190,592**
	F		M&V	Cost	$	$ 69,943	$ 72,601	$ 75,360	$ 78,224	$ 81,196	$ 84,282	$ 87,484	$ 90,809	$ 94,259	$ 97,841	$ 101,559
	G		Annual System Maintenance	Cost	$	$ 71,342	$ 74,053	$ 76,867	$ 79,788	$ 82,820	$ 85,967	$ 89,234	$ 92,625	$ 96,145	$ 99,798	$ 103,590
	H		**E.4+F+G**	**Total Annual Cost**		**$ 1,355,689**	**$ 1,361,058**	**$ 1,366,631**	**$ 1,372,416**	**$ 1,378,420**	**$ 1,384,653**	**$ 1,391,122**	**$ 1,397,838**	**$ 1,404,808**	**$ 1,412,043**	**$ 1,419,554**
Cash Flow	I		H-D	Project Cash Flow		**$ (9,119,213)**	**$ (8,088,397)**	**$ (7,033,367)**	**$ (5,956,942)**	**$ (4,858,682)**	**$ (3,738,137)**	**$ (2,594,846)**	**$ (1,428,339)**	**$ (238,138)**	**$ 976,248**	**$ 1,024,727**
			D-(E.4+F+G)	Annual Positive Cash Flow		**$ 574,869**	**$ 609,452**	**$ 648,323**	**$ 688,265**	**$ 729,313**	**$ 771,503**	**$ 814,871**	**$ 859,456**	**$ 905,297**	**$ 952,436**	**$ 1,000,915**
																$12,573,071
Year						10	11	12	13	14	15	16	17	18	19	20

Note-1: YESCO has anticipated meter dedrigation starting year 11
Note-2 YESCO has anticipated meter dedrigation starting year 6

LOAN AMORTIZATION SCHEDULE

ENTER VALUES	
Loan amount	$19,857,244.74
Annual interest rate	2.00%
Loan period in years	20
Number of payments per year	1
Start date of loan	1/1/2016
Optional extra payments	$ -

LOAN SUMMARY	
Scheduled payment	$1,214,403.92
Scheduled number of payments	20
Actual number of payments	20
Total early payments	$17,300.00
Total interest	$248,196.12
LENDER NAME	TBD

PMT NO	PAYMENT DATE	BEGINNING BALANCE	SCHEDULED PAYMENT	EXTRA PAYMENT	TOTAL PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	CUMULATIVE INTEREST
1	1/1/2016	$19,857,244.74	$1,214,403.92	$0.00	$1,214,403.92	$817,259.02	$397,144.89	$19,039,985.72	$397,144.89
2	2/1/2016	$19,039,985.72	$1,214,403.92	$0.00	$1,214,403.92	$833,604.20	$380,799.71	$18,206,381.51	$777,944.61
3	3/1/2016	$18,206,381.51	$1,214,403.92	$0.00	$1,214,403.92	$850,276.29	$364,127.63	$17,356,105.22	$1,142,072.24
4	4/1/2016	$17,356,105.22	$1,214,403.92	$0.00	$1,214,403.92	$867,281.81	$347,122.10	$16,488,823.41	$1,489,194.34
5	5/1/2016	$16,488,823.41	$1,214,403.92	$0.00	$1,214,403.92	$884,627.45	$329,776.47	$15,604,195.96	$1,818,970.81
6	6/1/2016	$15,604,195.96	$1,214,403.92	$0.00	$1,214,403.92	$902,320.00	$312,083.92	$14,701,875.96	$2,131,054.73
7	7/1/2016	$14,701,875.96	$1,214,403.92	$0.00	$1,214,403.92	$920,366.40	$294,037.52	$13,781,509.55	$2,425,092.25
8	8/1/2016	$13,781,509.55	$1,214,403.92	$0.00	$1,214,403.92	$938,773.73	$275,630.19	$12,842,735.83	$2,700,722.44
9	9/1/2016	$12,842,735.83	$1,214,403.92	$0.00	$1,214,403.92	$957,549.20	$256,854.72	$11,885,186.62	$2,957,577.16
10	10/1/2016	$11,885,186.62	$1,214,403.92	$0.00	$1,214,403.92	$976,700.19	$237,703.73	$10,908,486.44	$3,195,280.89
11	11/1/2016	$10,908,486.44	$1,214,403.92	$0.00	$1,214,403.92	$996,234.19	$218,169.73	$9,912,252.25	$3,413,450.62
12	12/1/2016	$9,912,252.25	$1,214,403.92	$0.00	$1,214,403.92	$1,016,158.87	$198,245.04	$8,896,093.37	$3,611,695.66
13	1/1/2017	$8,896,093.37	$1,214,403.92	$0.00	$1,214,403.92	$1,036,482.05	$177,921.87	$7,859,611.32	$3,789,617.53
14	2/1/2017	$7,859,611.32	$1,214,403.92	$0.00	$1,214,403.92	$1,057,211.69	$157,192.23	$6,802,399.63	$3,946,809.76
15	3/1/2017	$6,802,399.63	$1,214,403.92	$0.00	$1,214,403.92	$1,078,355.93	$136,047.99	$5,724,043.70	$4,082,857.75
16	4/1/2017	$5,724,043.70	$1,214,403.92	$0.00	$1,214,403.92	$1,099,923.05	$114,480.87	$4,624,120.66	$4,197,338.62
17	5/1/2017	$4,624,120.66	$1,214,403.92	$0.00	$1,214,403.92	$1,121,921.51	$92,482.41	$3,502,199.15	$4,289,821.04
18	6/1/2017	$3,502,199.15	$1,214,403.92	$0.00	$1,214,403.92	$1,144,359.94	$70,043.98	$2,357,839.21	$4,359,865.02
19	7/1/2017	$2,357,839.21	$1,214,403.92	$0.00	$1,214,403.92	$1,167,247.14	$47,156.78	$1,190,592.08	$4,407,021.80
20	8/1/2017	$1,190,592.08	$1,214,403.92	$0.00	$1,190,592.08	$1,166,780.24	$23,811.84	$0.00	$4,430,833.65

Appendix-K Statistical Analysis

3/4" Meter Test Analysis 90/10

3/4"	%	$(y_i-\bar{y})^2$	$\frac{(y_i-\bar{y})^2}{n-1}$
0.765	76.459	18.181	0.275
0.000	0.000	6516.212	98.730
0.979	97.854	293.471	4.447
0.934	93.444	161.825	2.452
0.684	68.449	150.648	2.283
0.000	0.000	6516.212	98.730
0.147	14.744	4353.212	65.958
0.148	14.829	4342.018	65.788
0.974	97.354	276.592	4.191
0.707	70.710	100.269	1.519
0.800	79.979	0.554	0.008
0.987	98.684	322.611	4.888
0.806	80.639	0.007	0.000
0.890	89.034	69.073	1.047
0.896	89.579	78.429	1.188
0.826	82.604	3.538	0.054
0.954	95.429	216.267	3.277
0.728	72.759	63.424	0.961
0.742	74.185	42.753	0.648
0.809	80.949	0.051	0.001
0.753	75.279	29.637	0.449
1.039	103.940	539.026	8.167
1.017	101.738	441.615	6.691
0.920	92.032	127.891	1.938
0.870	86.997	39.364	0.596
0.906	90.596	97.478	1.477
0.832	83.186	6.067	0.092
0.922	92.172	131.081	1.986
0.801	80.066	0.432	0.007
0.971	97.122	268.911	4.074
0.998	99.821	364.736	5.526
0.713	71.272	89.327	1.353
0.998	99.821	364.736	5.526
0.903	90.266	91.065	1.380
0.734	73.442	53.020	0.803
0.699	69.947	116.123	1.759
0.755	75.451	27.795	0.421
0.106	10.634	4912.523	74.432
0.701	70.110	112.629	1.706
0.860	85.977	27.601	0.418
0.712	71.232	90.077	1.365
0.946	94.650	193.946	2.939
0.768	76.847	15.024	0.228
0.920	92.050	128.288	1.944

0.821	82.058	1.782	0.027	
0.837	83.740	9.103	0.138	
0.692	69.193	132.941	2.014	
0.861	86.104	28.957	0.439	
0.979	97.910	295.405	4.476	
0.977	97.707	288.452	4.370	
0.799	79.853	0.757	0.011	
0.967	96.707	255.484	3.871	
0.871	87.105	40.730	0.617	
0.995	99.525	353.527	5.356	
0.977	97.746	289.772	4.390	
0.890	88.965	67.930	1.029	
0.904	90.355	92.774	1.406	
0.939	93.895	173.500	2.629	
0.749	74.925	33.617	0.509	
0.989	98.900	330.401	5.006	
0.937	93.740	169.441	2.567	
1.008	100.825	404.088	6.123	
0.980	98.045	300.050	4.546	
0.886	88.635	62.599	0.948	
0.782	78.245	6.141	0.093	
0.872	87.150	41.306	0.626	
0.748	74.785	35.261	0.534	
Avg 0.807	80.723	35207.752	533.451	
Sum 54.08	5408.44			

IPMVP Statistics and Uncertainty-June 2014

EQ. 1 **Mean** Ȳ 80.72

$$\bar{Y} = \frac{\sum Y_i}{n} \quad (1)$$

Sample Mean ($\bar{Y}$):determined by adding up the individual data points (Y_i) and dividing by the total number of these data points (n), as follows:

EQ. 2 **Sample Variance** S^2 525.49

$$S^2 = \frac{\sum (Y_i - \bar{Y})^2}{n-1} \quad (2)$$

Sample Variance (S^2): Sample variance measures the extent to which observed values differ from each other, i.e., variability or dispersion. The greater the variability, the greater the uncertainty in the mean. Sample variance is found by averaging the squares of the individual deviations from the mean. The reason these deviations from the mean are squared is simply to eliminate the negative values (when a value is below the mean) so they do not cancel out the positive values (when a value is above the mean). Sample variance is computed as follows:

EQ. 3 **Sample STD Dev** s 22.92

$$s = \sqrt{S^2} \quad (3)$$

Sample Standard Deviation (s): This is simply the square root of the sample variance. This brings the variability measure back to the units of the data (e.g., if the variance units are $(kWh)^2$, the standard deviation units would be kWh).

EQ. 4 **Sample Standard Error**

s	n	SE
22.92	67	2.80

$$SE = \frac{s}{\sqrt{n}} \quad (4)$$

Sample Standard Error (SE): This is the sample standard deviation divided by $\sqrt{n}$. This measure is used in estimating precision of a sample mean. It is also denoted as $\bar{s}$, or the "sample standard deviation of the mean" in most statistics textbooks.

EQ. 6 **Coefficent of Variance**

	S	Ȳ	**cv**
CV Sample Mean	22.924	80.72	**0.284**

$$cv = \frac{s}{\bar{Y}} \quad (6)$$

Coefficient of Variation (cv): The coefficient of variation is simply the standard deviation of a distribution expressed as a percentage of the mean. For instance, the cv of a sample total would be the [stot] ÷ [sample total]; the cv of a sample mean would be the [SEȲ] ÷ [sample mean]; etc. The general formula is:

Precision

Precision: Precision is the measure of the absolute or relative range within which the true value is expected to occur with some specified level of confidence. Confidence level refers to the probability that the quoted range contains the estimated parameter.

EQ. 7 **Absolute Percision**

	t=Z (Table 1)	SE	**AP**
DF=N-1= 66	**1.66**	2.80	**4.65**

$$t \bullet SE_{\hat{y}}(7)$$

Absolute precision is computed from sample standard error using a "t" value from a "t-distribution" Table. A t-distribution table is provided below, but can be found in statistic tables, books or on-line resources.

90% confidence that the true mean value lies in the range of **76.1** **and** **85.4**

EQ. 9 **Relative Precision** = txSE/estimate

txSE	estimate	**RP**
4.65	80.72	**5.8%**

$$\frac{t \bullet SE}{Estimate} \quad (9)$$

Relative precision is the absolute precision divided by the estimate:

90% confidence that the mean value of **67** **observations is** **80.7** **accuracy +/-** **5.8%**

Table 1 t-Table

Degrees of Freedom DF	Confidence Level 95%	90%	80%	50%	Degrees of Freedom DF	Confidence Level 95%	90%	80%	50%
1	12.71	6.31	3.08	1.00	16	2.12	1.75	1.34	0.69
2	4.30	2.92	1.89	0.82	17	2.11	1.74	1.33	0.69
3	3.18	2.35	1.64	0.76	18	2.10	1.73	1.33	0.69
4	2.78	2.13	1.53	0.74	19	2.09	1.73	1.33	0.69
5	2.57	2.02	1.48	0.73	21	2.08	1.72	1.32	0.69
6	2.45	1.94	1.44	0.72	23	2.07	1.71	1.32	0.69
7	2.36	1.89	1.41	0.71	25	2.06	1.71	1.32	0.68
8	2.31	1.86	1.40	0.71	27	2.05	1.70	1.31	0.68
9	2.26	1.83	1.38	0.70	31	2.04	1.70	1.31	0.68
10	2.23	1.81	1.37	0.70	35	2.03	1.69	1.31	0.68
11	2.20	1.80	1.36	0.70	41	2.02	1.68	1.30	0.68
12	2.18	1.78	1.36	0.70	49	2.01	1.68	1.30	0.68
13	2.16	1.77	1.35	0.69	60	2.00	1.67	1.30	0.68
14	2.14	1.76	1.35	0.69	120	1.98	1.66	1.29	0.68
15	2.13	1.75	1.34	0.69	∞	1.96	1.64	1.28	0.67

Note: Calculate DF using the following,

- DF = n – 1 (for a sample distribution)
- DF = n - p – 1 (for a regression model)

Where,
n = sample size
p = number of regression model variables

Check-I

Total Population N= 14383

Sample Size n= 67

$$\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)= \quad 533.45$$

$$\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n= \quad 7.96$$

$$\left(1-\frac{n}{N}\right)= \quad 0.995$$

Sample Error= SE= $\sqrt{\left(1-\frac{n}{N}\right) \text{x} \left[\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n\right]}$ = 2.82 Eq. 8 IPMVP 2002

t= **1.66**

Abs Precision	AP	txSE	**4.67**
Rel Precision	RP	AP/estimate	**5.8%**

IPMVP 2002 Sample Error Append. B Uncertainty

Sampling Error —Sampling error refers to errors resulting from the fact that a sample of units were observed rather than observing the entire set of units under study. The simplest sampling situation is that of a simple random sample. With this type of sample, a fixed number n of units is selected at random from a total population of N units. Each unit has the same probability n/N of being included in the sample. In this case, the standard error of the estimated mean is given by:

$$SE(y) = \sqrt{\left(1-\frac{n}{N}\right)\left(\left[\sum_{i=1}^{n}\frac{(y_i-\bar{y})^2}{(n-1)}\right]/n\right)} \qquad \textbf{Eq. 8}$$

For more complicated random samples, more complex formulas apply for the standard error. In general, however, the standard error is proportional to $1/(\sqrt{n})$. That is, increasing the sample size by a factor "f" will reduce the standard error (improve the precision of the estimate) by a factor of $\sqrt{f}$.

Check-II

Variance	S^2		525.49
std dev	s	sqrt(s^2)	22.92
Std Error	SE	s/sqrt(n)	2.80
	t		1.66
Abs Precision	AP	txSE	4.65
Rel Precision	RP	AP/estimat	5.8%

The Standard Error is: $SE = \frac{s}{\sqrt{n}} = \frac{150}{\sqrt{12}} = 43$

In Table 2, there are 12 data points. That means DF= 12-1=11. Using Table 1, for a confidence level of 90% the value for "t" is 1.80. Therefore:

the Absolute Precision is: $t \bullet SE = 1.80 \times 43 = 77$

the Relative Precision is: $\frac{t \bullet SE}{estimate} = \frac{77}{1{,}000} = 7.7\%$

So, there is 90% confidence that the true mean-monthly consumption lies in the range between 923 and 1,077 kWh. It can be said with 90% confidence that the mean value of the 12 observations is 1,000 ±7.7%. Similarly it could be said:

- with 95% confidence that the mean value of the 12 observations is 1,000 ±9.5%, or
- with 80% confidence that the mean value of the 12 observations is 1,000 ±5.8%, or
- with 50% confidence that the mean value of the 12 observations is 1,000 ±3.0%.

1" Meter Test Analysis 90/20

	%	$(y_i-\bar{y})^2$	$\frac{(y_i-\bar{y})^2}{n-1}$
0.976	97.588	3.529	0.160
0.964	96.423	0.510	0.023
0.924	92.399	10.958	0.498
0.978	97.803	4.383	0.199
0.911	91.117	21.091	0.959
0.982	98.195	6.180	0.281
0.995	99.455	14.028	0.638
0.982	98.180	6.105	0.278
0.988	98.847	9.848	0.448
0.986	98.565	8.156	0.371
0.969	96.936	1.504	0.068
0.993	99.262	12.624	0.574
0.948	94.769	0.884	0.040
0.978	97.758	4.197	0.191
0.987	98.655	8.678	0.394
0.956	95.558	0.023	0.001
0.948	94.833	0.768	0.035
0.987	98.730	9.124	0.415
0.924	92.372	11.136	0.506
0.974	97.389	2.821	0.128
0.821	82.056	186.404	8.473
0.931	93.060	7.018	0.319
0.914	91.363	18.891	0.859
Avg 0.957	95.709	348.860	15.857
Sum 22.01	2201.31		

IPMVP Statistics and Uncertainty-June 2014

EQ. 1 **Mean** Ȳ 95.71

$$\bar{Y}=\frac{\sum Y_i}{n} \quad (1)$$

Sample Mean ($\bar{Y}$):determined by adding up the individual data points (Y_i) and dividing by the total number of these data points (n), as follows:

EQ. 2 **Sample Variance** S^2 15.17

$$S^2=\frac{\sum(Y_i-\bar{Y})^2}{n-1} \quad (2)$$

Sample Variance (S^2): Sample variance measures the extent to which observed values differ from each other, i.e., variability or dispersion. The greater the variability, the greater the uncertainty in the mean. Sample variance is found by averaging the squares of the individual deviations from the mean. The reason these deviations from the mean are squared is simply to eliminate the negative values (when a value is below the mean) so they do not cancel out the positive values (when a value is above the mean). Sample variance is computed as follows:

EQ. 3 **Sample STD Dev** s 3.89

$$s=\sqrt{S^2} \quad (3)$$

Sample Standard Deviation (s): This is simply the square root of the sample variance. This brings the variability measure back to the units of the data (e.g., if the variance units are $(kWh)^2$, the standard deviation units would be kWh).

EQ. 4 **Sample Standard Error** s 3.89 n 23 SE 0.81

$$SE=\frac{s}{\sqrt{n}} \quad (4)$$

Sample Standard Error (SE): This is the sample standard deviation divided by $\sqrt{n}$. This measure is used in estimating precision of a sample mean. It is also denoted as $\bar{s}$, or the "sample standard deviation of the mean" in most statistics textbooks.

EQ. 6 **Coefficent of Variance**

	S	Ȳ	**cv**
CV Sample Mean	3.895	95.71	**0.041**

$$cv = \frac{s}{\bar{Y}} \quad (6)$$

Coefficient of Variation (cv): The coefficient of variation is simply the standard deviation of a distribution expressed as a percentage of the mean. For instance, the cv of a sample total would be the [stot] ÷ [sample total]; the cv of a sample mean would be the [SEȲ] ÷ [sample mean]; etc. The general formula is:

Precision

Precision: Precision is the measure of the absolute or relative range within which the true value is expected to occur with some specified level of confidence. Confidence level refers to the probability that the quoted range contains the estimated parameter.

EQ. 7 **Absolute Percision**

	t=Z (Table 1)	SE	**AP**
DF=N-1= 22	**1.71**	0.81	**1.39**

$$t \bullet SE_{\bar{y}} (7)$$

Absolute precision is computed from sample standard error using a "t" value from a "t-distribution" Table. A t-distribution table is provided below, but can be found in statistic tables, books or on-line resources.

90% confidence that the true mean value lies in the range of **94.3** **and** **97.1**

EQ. 9 **Relative Precision**

	= txSE/estimate	
txSE	estimate	**RP**
1.39	95.7	**1.5%**

$$\frac{t \bullet SE}{Estimate} \quad (9)$$

Relative precision is the absolute precision divided by the estimate:

90% confidence that the mean value of **23** **observations is** **95.7** **accuracy +/-** **1.5%**

Table 1 t-Table

Degrees of Freedom DF	Confidence Level				Degrees of Freedom DF	Confidence Level			
	95%	90%	80%	50%		95%	90%	80%	50%
1	12.71	6.31	3.08	1.00	16	2.12	1.75	1.34	0.69
2	4.30	2.92	1.89	0.82	17	2.11	1.74	1.33	0.69
3	3.18	2.35	1.64	0.76	18	2.10	1.73	1.33	0.69
4	2.78	2.13	1.53	0.74	19	2.09	1.73	1.33	0.69
5	2.57	2.02	1.48	0.73	21	2.08	1.72	1.32	0.69
6	2.45	1.94	1.44	0.72	23	2.07	1.71	1.32	0.69
7	2.36	1.89	1.41	0.71	25	2.06	1.71	1.32	0.68
8	2.31	1.86	1.40	0.71	27	2.05	1.70	1.31	0.68
9	2.26	1.83	1.38	0.70	31	2.04	1.70	1.31	0.68
10	2.23	1.81	1.37	0.70	35	2.03	1.69	1.31	0.68
11	2.20	1.80	1.36	0.70	41	2.02	1.68	1.30	0.68
12	2.18	1.78	1.36	0.70	49	2.01	1.68	1.30	0.68
13	2.16	1.77	1.35	0.69	60	2.00	1.67	1.30	0.68
14	2.14	1.76	1.35	0.69	120	1.98	1.66	1.29	0.68
15	2.13	1.75	1.34	0.69	∞	1.96	1.64	1.28	0.67

Note: Calculate DF using the following,

- DF = n – 1 (for a sample distribution)
- DF = n - p – 1 (for a regression model)

Where,
n = sample size
p = number of regression model variables

Check-I

Total Population	N=	2023
Sample Size	n=	23

$$\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right) = \quad 15.86$$

$$\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n = \quad 0.69$$

$$\left(1-\frac{n}{N}\right) = \quad 0.989$$

Sample Error= $SE=\sqrt{\left(1-\frac{n}{N}\right) \times \left[\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n\right]} =$ 0.83 Eq. 8 IPMVP 2002

t= **1.71**

Abs Precision	AP	txSE	**1.41**
Rel Precision	RP	AP/estimate	**1.5%**

IPMVP 2002 Sample Error Append. B Uncertainty

Sampling Error —Sampling error refers to errors resulting from the fact that a sample of units were observed rather than observing the entire set of units under study. The simplest sampling situation is that of a simple random sample. With this type of sample, a fixed number n of units is selected at random from a total population of N units. Each unit has the same probability n/N of being included in the sample. In this case, the standard error of the estimated mean is given by:

$$SE(y) = \sqrt{\left(1-\frac{n}{N}\right)\left(\left[\sum_{i=1}^{n}\frac{(y_i-\bar{y})^2}{(n-1)}\right]/n\right)} \qquad \textbf{Eq. 8}$$

For more complicated random samples, more complex formulas apply for the standard error. In general, however, the standard error is proportional to $1/(\sqrt{n})$. That is, increasing the sample size by a factor "f" will reduce the standard error (improve the precision of the estimate) by a factor of $\sqrt{f}$.

Check-II

Variance	S^2		15.17
std dev	s	sqrt(s^2)	3.89
Std Error	SE	s/sqrt(n)	0.81
	t		1.71
Abs Precision	AP	txSE	1.39
Rel Precision	RP	AP/estimat	1.5%

The Standard Error is: $SE=\frac{s}{\sqrt{n}}=\frac{150}{\sqrt{12}}=43$

In Table 2, there are 12 data points. That means DF= 12-1=11. Using Table 1, for a confidence level of 90% the value for "t" is 1.80. Therefore:

the Absolute Precision is: $t \bullet SE = 1.80 \times 43 = 77$

the Relative Precision is: $\frac{t \bullet SE}{estimate}=\frac{77}{1{,}000}=7.7\%$

So, there is 90% confidence that the true mean-monthly consumption lies in the range between 923 and 1,077 kWh. It can be said with 90% confidence that the mean value of the 12 observations is 1,000 ±7.7%. Similarly it could be said:

- with 95% confidence that the mean value of the 12 observations is 1,000 ±9.5%, or
- with 80% confidence that the mean value of the 12 observations is 1,000 ±5.8%, or
- with 50% confidence that the mean value of the 12 observations is 1,000 ±3.0%.

1-1/2" Meter Test Analysis 90/20

	%	$(y_i-\bar{y})^2$	$\frac{(y_i-\bar{y})^2}{n-1}$
0.987	98.675	75.248	4.703
0.963	96.279	39.415	2.463
0.948	94.777	22.811	1.426
0.947	94.730	22.371	1.398
0.945	94.479	20.055	1.253
0.991	99.075	82.347	5.147
0.970	97.025	49.350	3.084
0.976	97.625	58.139	3.634
0.917	91.682	2.829	0.177
0.900	89.987	0.000	0.000
0.940	94.029	16.229	1.014
0.940	94.034	16.270	1.017
0.957	95.679	32.242	2.015
0.944	94.429	19.612	1.226
0.996	99.624	92.602	5.788
0.947	94.680	21.902	1.369
0.032	3.199	7534.520	470.908
Avg 0.900	90.001	8105.942	506.621
Sum 15.30	1530.01		

IPMVP Statistics and Uncertainty-June 2014

EQ. 1	**Mean**	$\bar{Y}$	90.00		$\bar{Y}=\frac{\sum Y_i}{n}$	(1)	**Sample Mean** ($\bar{Y}$):determined by adding up the individual data points (Y_i) and dividing by the total number of these data points (n), as follows:
EQ. 2	**Sample Variance**	S^2	476.82		$S^2=\frac{\sum(Y_i-\bar{Y})^2}{n-1}$	(2)	**Sample Variance** (S^2): Sample variance measures the extent to which observed values differ from each other, i.e., variability or dispersion. The greater the variability, the greater the uncertainty in the mean. Sample variance is found by averaging the squares of the individual deviations from the mean. The reason these deviations from the mean are squared is simply to eliminate the negative values (when a value is below the mean) so they do not cancel out the positive values (when a value is above the mean). Sample variance is computed as follows:
EQ. 3	**Sample STD Dev**	s	21.84		$s=\sqrt{S^2}$	(3)	**Sample Standard Deviation** (s): This is simply the square root of the sample variance. This brings the variability measure back to the units of the data (e.g., if the variance units are $(kWh)^2$, the standard deviation units would be kWh).
EQ. 4	**Sample Standard Error**	s 21.84	n 17	SE 5.30	$SE=\frac{s}{\sqrt{n}}$	(4)	**Sample Standard Error** (SE): This is the sample standard deviation divided by $\sqrt{n}$. This measure is used in estimating precision of a sample mean. It is also denoted as $\bar{s}$, or the "sample standard deviation of the mean" in most statistics textbooks.

EQ. 6 **Coefficent of Variance**

	S	Ȳ	cv
CV Sample Mean	21.836	90.00	**0.243**

$$cv = \frac{s}{\bar{Y}} \quad (6)$$

Coefficient of Variation (cv): The coefficient of variation is simply the standard deviation of a distribution expressed as a percentage of the mean. For instance, the cv of a sample total would be the [stot] ÷ [sample total]; the cv of a sample mean would be the [SEȲ] ÷ [sample mean]; etc. The general formula is:

Precision

Precision: Precision is the measure of the absolute or relative range within which the true value is expected to occur with some specified level of confidence. Confidence level refers to the probability that the quoted range contains the estimated parameter.

EQ. 7 **Absolute Percision**

	t=Z (Table 1)	SE	AP
DF=N-1= 16	**1.75**	5.30	**9.27**

$$t \bullet SE_{\bar{Y}} \quad (7)$$

Absolute precision is computed from sample standard error using a "t" value from a "t-distribution" Table. A t-distribution table is provided below, but can be found in statistic tables, books or on-line resources.

90% confidence that the true mean value lies in the rang **80.7** **and** **99.3**

EQ. 9 **Relative Precision** = txSE/estimate

txSE	estimate	RP
9.27	90.0	**10.3%**

$$\frac{t \bullet SE}{Estimate} \quad (9)$$

Relative precision is the absolute precision divided by the estimate:

90% confidence that the mean value of **17** **observations is** **90.0** **accuracy +/-** **10.3%**

Table 1 t-Table

Degrees of Freedom DF	Confidence Level 95%	90%	80%	50%	Degrees of Freedom DF	Confidence Level 95%	90%	80%	50%
1	12.71	6.31	3.08	1.00	16	2.12	1.75	1.34	0.69
2	4.30	2.92	1.89	0.82	17	2.11	1.74	1.33	0.69
3	3.18	2.35	1.64	0.76	18	2.10	1.73	1.33	0.69
4	2.78	2.13	1.53	0.74	19	2.09	1.73	1.33	0.69
5	2.57	2.02	1.48	0.73	21	2.08	1.72	1.32	0.69
6	2.45	1.94	1.44	0.72	23	2.07	1.71	1.32	0.69
7	2.36	1.89	1.41	0.71	25	2.06	1.71	1.32	0.68
8	2.31	1.86	1.40	0.71	27	2.05	1.70	1.31	0.68
9	2.26	1.83	1.38	0.70	31	2.04	1.70	1.31	0.68
10	2.23	1.81	1.37	0.70	35	2.03	1.69	1.31	0.68
11	2.20	1.80	1.36	0.70	41	2.02	1.68	1.30	0.68
12	2.18	1.78	1.36	0.70	49	2.01	1.68	1.30	0.68
13	2.16	1.77	1.35	0.69	60	2.00	1.67	1.30	0.68
14	2.14	1.76	1.35	0.69	120	1.98	1.66	1.29	0.68
15	2.13	1.75	1.34	0.69	∞	1.96	1.64	1.28	0.67

Note: Calculate DF using the following,

- DF = n – 1 (for a sample distribution)
- DF = n - p – 1 (for a regression model)

Where,
n = sample size
p = number of regression model variables

Check-I

Total Population N= 1019

Sample Size n= 17

$$\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right) = \quad 506.62$$

$$\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n = \quad 29.80$$

$$\left(1-\frac{n}{N}\right) = \quad 0.983$$

Sample Error= $SE = \sqrt{\left(1-\frac{n}{N}\right) \times \left[\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n\right]} =$ 5.41

Eq. 8 IPMVP 2002 Appendix B Uncertainty

t= **1.75**

Abs Precision	AP	txSE	**9.47**
Rel Precision	RP	AP/estimate	**10.5%**

IPMVP 2002 Sample Error Append. B Uncertainty

Sampling Error —Sampling error refers to errors resulting from the fact that a sample of units were observed rather than observing the entire set of units under study. The simplest sampling situation is that of a simple random sample. With this type of sample, a fixed number n of units is selected at random from a total population of N units. Each unit has the same probability n/N of being included in the sample. In this case, the standard error of the estimated mean is given by:

$$SE(y) = \sqrt{\left(1-\frac{n}{N}\right)\left(\left[\sum_{i=1}^{n}\frac{(y_i-\bar{y})^2}{(n-1)}\right]/n\right)} \qquad \textbf{Eq. 8}$$

For more complicated random samples, more complex formulas apply for the standard error. In general, however, the standard error is proportional to $1/(\sqrt{n})$. That is, increasing the sample size by a factor "f" will reduce the standard error (improve the precision of the estimate) by a factor of $\sqrt{f}$.

Check-II

Variance	S^2		476.82
std dev	s	sqrt(s^2)	21.84
Std Error	SE	s/sqrt(n)	5.30
	t		1.75
Abs Precision	AP	txSE	9.27
Rel Precision	RP	AP/estimat	10.3%

The Standard Error is: $SE = \frac{s}{\sqrt{n}} = \frac{150}{\sqrt{12}} = 43$

In Table 2, there are 12 data points. That means DF= 12-1=11. Using Table 1, for a confidence level of 90% the value for "t" is 1.80. Therefore:

the Absolute Precision is: $t \bullet SE = 1.80 \times 43 = 77$

the Relative Precision is: $\frac{t \bullet SE}{estimate} = \frac{77}{1{,}000} = 7.7\%$

So, there is 90% confidence that the true mean-monthly consumption lies in the range between 923 and 1,077 kWh. It can be said with 90% confidence that the mean value of the 12 observations is 1,000 ±7.7%. Similarly it could be said:

- with 95% confidence that the mean value of the 12 observations is 1,000 ±9.5%, or
- with 80% confidence that the mean value of the 12 observations is 1,000 ±5.8%, or
- with 50% confidence that the mean value of the 12 observations is 1,000 ±3.0%.

2" Meter Test Analysis 90/20

		%	$(y_i-\bar{y})^2$	$\frac{(y_i-\bar{y})^2}{n-1}$
	0.937	93.719	82.457	5.154
	0.952	95.206	111.677	6.980
	0.914	91.432	46.153	2.885
	0.948	94.813	103.529	6.471
	0.714	71.426	174.575	10.911
	0.767	76.702	62.980	3.936
	0.764	76.355	68.611	4.288
	0.942	94.197	91.368	5.711
	0.962	96.188	133.387	8.337
	0.777	77.746	47.506	2.969
	0.765	76.502	66.194	4.137
	0.835	83.518	1.256	0.078
	0.989	98.857	202.166	12.635
	0.841	84.108	0.282	0.018
	0.718	71.823	164.236	10.265
	0.814	81.371	10.674	0.667
	0.749	74.889	95.043	5.940
Avg	0.846	84.638	1462.093	91.381
Sum	14.39	1438.85		

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EQ. 1	**Mean**	$\bar{Y}$	84.64		$\bar{Y}=\frac{\sum Y_i}{n}$	(1)	**Sample Mean** ($\bar{Y}$):determined by adding up the individual data points (Y_i) and dividing by the total number of these data points (n), as follows:
EQ. 2	**Sample Variance**	S^2	86.01		$S^2=\frac{\sum(Y_i-\bar{Y})^2}{n-1}$	(2)	**Sample Variance** (S^2): Sample variance measures the extent to which observed values differ from each other, i.e., variability or dispersion. The greater the variability, the greater the uncertainty in the mean. Sample variance is found by averaging the squares of the individual deviations from the mean. The reason these deviations from the mean are squared is simply to eliminate the negative values (when a value is below the mean) so they do not cancel out the positive values (when a value is above the mean). Sample variance is computed as follows:
EQ. 3	**Sample STD Dev**	s	9.27		$s=\sqrt{S^2}$	(3)	**Sample Standard Deviation** (s): This is simply the square root of the sample variance. This brings the variability measure back to the units of the data (e.g., if the variance units are $(kWh)^2$, the standard deviation units would be kWh).
EQ. 4	**Sample Standard Error**	s 9.27	n 17	SE 2.25	$SE=\frac{s}{\sqrt{n}}$	(4)	**Sample Standard Error** (SE): This is the sample standard deviation divided by $\sqrt{n}$. This measure is used in estimating precision of a sample mean. It is also denoted as $\bar{s}$, or the "sample standard deviation of the mean" in most statistics textbooks.

EQ. 6 **Coefficent of Variance**

	S	Ȳ	cv
CV Sample Mean	9.274	84.64	**0.110**

$$cv = \frac{s}{\bar{Y}} \quad (6)$$

Coefficient of Variation (cv): The coefficient of variation is simply the standard deviation of a distribution expressed as a percentage of the mean. For instance, the cv of a sample total would be the [stot] ÷ [sample total]; the cv of a sample mean would be the [SEȲ] ÷ [sample mean]; etc. The general formula is:

Precision

Precision: Precision is the measure of the absolute or relative range within which the true value is expected to occur with some specified level of confidence. Confidence level refers to the probability that the quoted range contains the estimated parameter.

EQ. 7 **Absolute Percision**

	t=Z (Table 1)	SE	AP
DF=N-1= 16	**1.75**	2.25	**3.94**

$$t \bullet SE_{\bar{y}} (7)$$

Absolute precision is computed from sample standard error using a "t" value from a "t-distribution" Table. A t-distribution table is provided below, but can be found in statistic tables, books or on-line resources.

90% confidence that the true mean value lies in the range o **80.7** **and** **88.6**

EQ. 9 **Relative Precision** = txSE/estimate

txSE	estimate	RP
3.94	84.6	**4.7%**

$$\frac{t \bullet SE}{Estimate} \quad (9)$$

Relative precision is the absolute precision divided by the estimate:

90% confidence that the mean value of **17** **observations is** **84.6** **accuracy +/- 4.7%**

Table 1 t-Table

Degrees of Freedom DF	Confidence Level				Degrees of Freedom DF	Confidence Level			
	95%	90%	80%	50%		95%	90%	80%	50%
1	12.71	6.31	3.08	1.00	16	2.12	1.75	1.34	0.69
2	4.30	2.92	1.89	0.82	17	2.11	1.74	1.33	0.69
3	3.18	2.35	1.64	0.76	18	2.10	1.73	1.33	0.69
4	2.78	2.13	1.53	0.74	19	2.09	1.73	1.33	0.69
5	2.57	2.02	1.48	0.73	21	2.08	1.72	1.32	0.69
6	2.45	1.94	1.44	0.72	23	2.07	1.71	1.32	0.69
7	2.36	1.89	1.41	0.71	25	2.06	1.71	1.32	0.68
8	2.31	1.86	1.40	0.71	27	2.05	1.70	1.31	0.68
9	2.26	1.83	1.38	0.70	31	2.04	1.70	1.31	0.68
10	2.23	1.81	1.37	0.70	35	2.03	1.69	1.31	0.68
11	2.20	1.80	1.36	0.70	41	2.02	1.68	1.30	0.68
12	2.18	1.78	1.36	0.70	49	2.01	1.68	1.30	0.68
13	2.16	1.77	1.35	0.69	60	2.00	1.67	1.30	0.68
14	2.14	1.76	1.35	0.69	120	1.98	1.66	1.29	0.68
15	2.13	1.75	1.34	0.69	∞	1.96	1.64	1.28	0.67

Note: Calculate DF using the following,

- DF = n – 1 (for a sample distribution)
- DF = n - p – 1 (for a regression model)

Where,
n = sample size
p = number of regression model variables

Check-I

Total Population N= 432

Sample Size n= 17

$$\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)= \quad 91.38$$

$$\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n= \quad 5.38$$

$$\left(1-\frac{n}{N}\right)= \quad 0.961$$

Sample Error= $SE=\sqrt{\left(1-\frac{n}{N}\right)\times\left[\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n\right]}=$ 2.27

Eq. 8 IPMVP 2002 Appendix B Uncertainty

t= **1.75**

Abs Precision	AP	txSE	**3.98**
Rel Precision	RP	AP/estimate	**4.7%**

IPMVP 2002 Sample Error Append. B Uncertainty

Sampling Error —Sampling error refers to errors resulting from the fact that a sample of units were observed rather than observing the entire set of units under study. The simplest sampling situation is that of a simple random sample. With this type of sample, a fixed number n of units is selected at random from a total population of N units. Each unit has the same probability n/N of being included in the sample. In this case, the standard error of the estimated mean is given by:

$$SE(y) = \sqrt{\left(1-\frac{n}{N}\right)\left(\left[\sum_{i=1}^{n}\frac{(y_i-\bar{y})^2}{(n-1)}\right]/n\right)} \qquad \textbf{Eq. 8}$$

For more complicated random samples, more complex formulas apply for the standard error. In general, however, the standard error is proportional to $1/(\sqrt{n})$. That is, increasing the sample size by a factor "f" will reduce the standard error (improve the precision of the estimate) by a factor of $\sqrt{f}$.

Check-II

Variance	S^2		86.01
std dev	s	sqrt(s^2)	9.27
Std Error	SE	s/sqrt(n)	2.25
	t		1.75
Abs Precision	AP	txSE	3.94
Rel Precision	RP	AP/estimat	4.7%

The Standard Error is: $SE=\frac{s}{\sqrt{n}}=\frac{150}{\sqrt{12}}=43$

In Table 2, there are 12 data points. That means DF= 12-1=11. Using Table 1, for a confidence level of 90% the value for "t" is 1.80. Therefore:

the Absolute Precision is: $t \bullet SE = 1.80 \times 43 = 77$

the Relative Precision is: $\frac{t \bullet SE}{estimate}=\frac{77}{1{,}000}=7.7\%$

So, there is 90% confidence that the true mean-monthly consumption lies in the range between 923 and 1,077 kWh. It can be said with 90% confidence that the mean value of the 12 observations is 1,000 ±7.7%. Similarly it could be said:

- with 95% confidence that the mean value of the 12 observations is 1,000 ±9.5%, or
- with 80% confidence that the mean value of the 12 observations is 1,000 ±5.8%, or
- with 50% confidence that the mean value of the 12 observations is 1,000 ±3.0%.

4" Meter Test Analysis 80/20

		%	$(y_i-\bar{y})^2$	$\frac{(y_i-\bar{y})^2}{n-1}$
	0.653	65.261	3.125	0.391
	0.647	64.698	5.436	0.679
	0.856	85.581	344.168	43.021
	0.000	0.000	4492.878	561.610
	0.416	41.607	646.264	80.783
	0.944	94.361	747.067	93.383
	0.837	83.716	278.454	34.807
	0.780	77.996	120.283	15.035
	0.900	90.040	529.518	66.190
Avg	0.670	67.029	7167.194	895.899
Sum	6.03	603.26		

IPMVP Statistics and Uncertainty-June 2014

EQ. 1 **Mean** $\bar{Y}$ 67.03 $\bar{Y}=\frac{\sum Y_i}{n}$ (1)

Sample Mean ($\bar{Y}$):determined by adding up the individual data points (Y_i) and dividing by the total number of these data points (n), as follows:

EQ. 2 **Sample Variance** S^2 796.35 $S^2=\frac{\sum(Y_i-\bar{Y})^2}{n-1}$ (2)

Sample Variance (S^2): Sample variance measures the extent to which observed values differ from each other, i.e., variability or dispersion. The greater the variability, the greater the uncertainty in the mean. Sample variance is found by averaging the squares of the individual deviations from the mean. The reason these deviations from the mean are squared is simply to eliminate the negative values (when a value is below the mean) so they do not cancel out the positive values (when a value is above the mean). Sample variance is computed as follows:

EQ. 3 **Sample STD Dev** s 28.22 $s=\sqrt{S^2}$ (3)

Sample Standard Deviation (s): This is simply the square root of the sample variance. This brings the variability measure back to the units of the data (e.g., if the variance units are $(kWh)^2$, the standard deviation units would be kWh).

EQ. 4 **Sample Standard Error**

s	n	SE
28.22	9	9.41

$SE=\frac{s}{\sqrt{n}}$ (4)

Sample Standard Error (SE): This is the sample standard deviation divided by $\sqrt{n}$. This measure is used in estimating precision of a sample mean. It is also denoted as $\bar{s}$, or the "sample standard deviation of the mean" in most statistics textbooks.

EQ. 6 **Coefficent of Variance**

S	$\bar{Y}$	**cv**
CV Sample Mean 28.220	67.03	**0.421**

$cv=\frac{s}{\bar{Y}}$ (6)

Coefficient of Variation (cv): The coefficient of variation is simply the standard deviation of a distribution expressed as a percentage of the mean. For instance, the cv of a sample total would be the [stot] ÷ [sample total]; the cv of a sample mean would be the [SE$\bar{Y}$] ÷ [sample mean]; etc. The general formula is:

Precision

Precision: Precision is the measure of the absolute or relative range within which the true value is expected to occur with some specified level of confidence. Confidence level refers to the probability that the quoted range contains the estimated parameter.

EQ. 7 **Absolute Percision**

t=Z (Table 1)	SE	**AP**
DF=N-1= 8 **1.4**	9.41	**13.17**

$t \bullet SE_{\bar{Y}}$ (7)

Absolute precision is computed from sample standard error using a "t" value from a "t-distribution" Table. A t-distribution table is provided below, but can be found in statistic tables, books or on-line resources.

80% confidence that the true mean value lies in the range of **53.9** **and** **80.2**

EQ. 9 **Relative Precision** = txSE/estimate

txSE	estimate	RP
13.17	67.0	**19.6%**

$$\frac{t \bullet SE}{Estimate} \quad (9)$$

Relative precision is the absolute precision divided by the estimate:

80% confidence that the mean value of	**9**	**observations is**		**67.0**	**accuracy +/- 19.6%**

Table 1 t-Table

Degrees of Freedom	Confidence Level				Degrees of Freedom	Confidence Level			
DF	95%	90%	80%	50%	DF	95%	90%	80%	50%
1	12.71	6.31	3.08	1.00	16	2.12	1.75	1.34	0.69
2	4.30	2.92	1.89	0.82	17	2.11	1.74	1.33	0.69
3	3.18	2.35	1.64	0.76	18	2.10	1.73	1.33	0.69
4	2.78	2.13	1.53	0.74	19	2.09	1.73	1.33	0.69
5	2.57	2.02	1.48	0.73	21	2.08	1.72	1.32	0.69
6	2.45	1.94	1.44	0.72	23	2.07	1.71	1.32	0.69
7	2.36	1.89	1.41	0.71	25	2.06	1.71	1.32	0.68
8	2.31	1.86	1.40	0.71	27	2.05	1.70	1.31	0.68
9	2.26	1.83	1.38	0.70	31	2.04	1.70	1.31	0.68
10	2.23	1.81	1.37	0.70	35	2.03	1.69	1.31	0.68
11	2.20	1.80	1.36	0.70	41	2.02	1.68	1.30	0.68
12	2.18	1.78	1.36	0.70	49	2.01	1.68	1.30	0.68
13	2.16	1.77	1.35	0.69	60	2.00	1.67	1.30	0.68
14	2.14	1.76	1.35	0.69	120	1.98	1.66	1.29	0.68
15	2.13	1.75	1.34	0.69	∞	1.96	1.64	1.28	0.67

Note: Calculate DF using the following,

- DF = n – 1 (for a sample distribution)
- DF = n - p – 1 (for a regression model)

Where,
n = sample size
p = number of regression model variables

Check-I

Check-II

Total Population	N= 32		
Sample Size	n= 9		
	$\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)=$	895.90	
	$\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n=$	99.54	
	$\left(1-\frac{n}{N}\right)=$	0.719	
Sample Error=	SE= $\sqrt{\left(1-\frac{n}{N}\right)\text{x}\left[\left[\sum_{k=1}^{n}\left(\frac{(y_i-\bar{y})^2}{n-1}\right)\right]/n\right]}=$	8.46	Eq. 8 IPMVP 2002 Appendix B Uncertainty
		t=	**1.4**
	Abs Precision AP	txSE	**11.84**
	Rel Precision RP	AP/estimate	**17.7%**

IPMVP 2002 Sample Error Append. B Uncertainty

Sampling Error —Sampling error refers to errors resulting from the fact that a sample of units were observed rather than observing the entire set of units under study. The simplest sampling situation is that of a simple random sample. With this type of sample, a fixed number n of units is selected at random from a total population of N units. Each unit has the same probability n/N of being included in the sample. In this case, the standard error of the estimated mean is given by:

$$SE(y) = \sqrt{\left(1-\frac{n}{N}\right)\left(\left[\sum_{i=1}^{n}\frac{(y_i-\bar{y})^2}{(n-1)}\right]/n\right)} \qquad \textbf{Eq. 8}$$

For more complicated random samples, more complex formulas apply for the standard error. In general, however, the standard error is proportional to $1/(\sqrt{n})$. That is, increasing the sample size by a factor "f" will reduce the standard error (improve the precision of the estimate) by a factor of $\sqrt{f}$.

Variance	S^2		796.35
std dev	s	sqrt(s^2)	28.22
Std Error	SE	s/sqrt(n)	9.41
	t		1.4
Abs Precision	AP	txSE	13.17
Rel Precision	RP	AP/estimat	19.6%

The Standard Error is: $SE = \frac{s}{\sqrt{n}} = \frac{150}{\sqrt{12}} = 43$

In Table 2, there are 12 data points. That means DF= 12-1=11. Using Table 1, for a confidence level of 90% the value for "t" is 1.80. Therefore:

the Absolute Precision is: $t \bullet SE = 1.80 \times 43 = 77$

the Relative Precision is: $\frac{t \bullet SE}{estimate} = \frac{77}{1{,}000} = 7.7\%$

So, there is 90% confidence that the true mean-monthly consumption lies in the range between 923 and 1,077 kWh. It can be said with 90% confidence that the mean value of the 12 observations is 1,000 ±7.7%. Similarly it could be said:

- with 95% confidence that the mean value of the 12 observations is 1,000 ±9.5%, or
- with 80% confidence that the mean value of the 12 observations is 1,000 ±5.8%, or
- with 50% confidence that the mean value of the 12 observations is 1,000 ±3.0%.

Appendix-L Warranty

RETRO-TECH SYSTEMS

RTS Water Solutions, LLC
9240 NW 63rd Street, Suite 6
Parkville, MO. 64152

Telephone: (816) 880-6600
Fax: (816) 880-6620
Cell: (260) 633-1400 Donald Shuler
E-Mail: dshuler@rtswater.com

To: Yearout Energy
8501 Washington St NE
Albuquerque, NM 87113
Project: Roswell, NM. Meter Installation

Substantial Completion Date:
BLANK

THE WARRANTY: RTS Water Solutions, LLC warrants all work performed as part of the above referenced project and defined in the As-Built line-by-lines to be free from defects in workmanship for a period of one (1) year from the date of substantial completion, BLANK

In the event defects are identified during the Warranty Period, the above person should be notified immediately.

---------- ----------

Donald Shuler
RTS Water Solutions, LLC

Date

Appendix-L Warranty Meters

Manufacturer Developing Submittal

Appendix-L Warranty AMI

Manufacturer Developing Submittal

Appendices M- M-36 Ch.5 Organizing a Leak Detection Program

If the active leakage control program includes both DMA flow monitoring and leak detection surveys, leakage reduction can be conducted strategically, with leak detection teams deployed only in areas where high minimum-hour flows indicate the presence of newly formed leaks.

The major considerations in creating an in-house leak detection program include

1. Develop objectives for leak detection activities by reviewing the findings of the water audit. From the water audit assess the volume, sources, and cost impact of leakage and estimate how much leakage can be reduced by employing leak detection and repair. Convert the projected leakage reduction to a cost savings of variable costs. Project the needed level of staffing, equipment, training, and crew deployment. Effective leak detection teams can survey roughly two miles of pipeline per day at a cost of approximately $200–$300/mi of pipeline. To formulate the work pace, assess the characteristics of the water distribution system, including

   a. Mains and services: types, ages, diameters, joints, installation methods, inspections, leak histories, and operating pressures.

   b. Meters and meter-box assemblies: location of the meter (in an outdoor meter pit or indoors) types, brands, and sizes of meters; ages; types of installations; meter shutoffs; coupling; and meter reading frequency.

   c. Valves: locations, accessibility (are valve covers buried or stuck?) types, clockwise or counter clockwise-turning, number of turns to exercise; and how often they are exercised.

   d. Hydrants: types, sizes, locations, flushing frequencies, and unmetered usage.

   e. Pressure-reducing valves, pressure-sustaining valves, and pressure-relief valves; locations and how often they are exercised.

   f. Blow-offs and air-release valves; locations and how often they are exercised.

   g. Distribution system maps: What is shown on maps (valves and other appurtenances), how current is the information, and how often is the information updated?

   h. Curb stops on customer service connection piping: typical locations, accessibility, mode of operation (quarter turn), and service pipe material.

2. Make a determination as to whether leak detection survey work will be carried out manually, via the use of leak noise loggers, or a combination of both techniques. This decision will greatly influence the required funding as manual methods require greater labor, while the use of leak noise loggers needs less labor but needs a different form of equipment and training. See the discussion in section Simple Leak Noise Probes.

3. Assemble the leak detection team by selecting motivated employees with a keen sense of hearing, the ability to discern different sounds, familiarity with water meters and the distribution system, a sense of responsibility, and the ability to estimate leak flows, complete leak forms, and work independently. One person might conduct the initial listening survey, although additional staff may be required for safety purposes. Ensure that the crew members can work compatibly, have a communication link to others for emergencies, and that work assignments are clearly defined.

4. Provide crew members with good-quality leak detection equipment, including sonic listening equipment with a high-frequency listening probe and a low-frequency ground microphone for pinpointing leaks. When using the ground microphone on turf areas, a *thumb tack* helps provide better-quality sounds. A thumb tack is a flat, metal,

device must be carefully tracked. Any branching mains from the transmission pipeline must be valved closed during the survey. Shorter spacing may be needed in pipelines with many bends. Sensors rely on minimum water pressure of at least 5 psi such that leaks will generate an audible leak noise.

During the survey the operator listens to the audio signal and tracks the location of the sensor. As in-line systems depend on the flow of water for propulsion, steps may need to be taken to adjust the flow. Opening valves and hydrants downstream of the survey and increasing the flow from pumps upstream can help ensure a smooth survey. For tethered systems, friction builds at points around bends, as does drag from the flow of water along the tether. A brief pull-back should be attempted every 300 ft to verify that the friction and drag are within the system tolerances. In addition, care needs to be taken to ensure that slack does not build up in the tether, ensuring that it remains untangled. This can be done using a device for locating the sensor on the surface and comparing the distance actually traveled to the length of tether deployed. Leak audio signals can be clearly identified by a trained operator. When leaks are detected, the location of the leaks should be carefully noted. Likewise, audio signals characteristic of air trapped in the pipe can be clearly identified. Air pockets should be recorded to identify where air can become entrapped.

In-line leak detection is offered as a service by specialized contractors, or equipment sales or leases may be available to utilities needing large volumes of surveys. The service can be expensive; however, it is also highly accurate and able to traverse locations that are inaccessible for traditional leak detection surveys. While requiring an investment to obtain these services, water utilities have potential to save money in the long run by identifying small leaks on transmission mains and addressing them before they become large, disruptive ruptures. Many water utilities have not surveyed their transmission mains adequately for leaks, and in-line leak detection technology offers an outstanding capability to monitor these important water supply assets.

Innovations in electronic leak detection techniques continue to occur. Free swimming in-line systems hold some promise for the future. Presently, leak correlators, LNLs, LNTs, and in-line tethered systems have all proven to be particularly effective tools in successful programs and should be considered by water utility managers when planning a leak detection program.

Organizing a leak detection program. Leak detection is most often carried out by traditional leak surveys by manually sounding water system appurtenances such as valves, fire hydrants, service connection curb stops, or other accessible points on active piping. Water utility operators conduct a leak detection survey by systematically canvassing the water distribution system in such a manner. The development of leak noise loggers, which can be deployed and programmed to "awaken" at minimum noise hours, allows a significant portion of the labor-intensive leak survey process to be automated. With new leaks constantly forming in water distribution systems, the optimum approach is to focus on areas where leakage is suspected. DMAs detecting high minimum hour flow provide such a focus.

Analysis of historical leak records can also serve as a guide to predict areas of concern. However, most water utilities that conduct leak surveys schedule the distribution system for leak detection on some regular frequency without necessarily targeting areas currently indicating high leakage levels. Many small water utilities hire a contractor to survey the entire distribution system once every 3–5 years. Large systems often staff in-house leak detection squads that survey the system on an ongoing basis, but, because of the large size of the distribution system, may only cover the system fully once every 1–5 years. Leak surveys typically require two rounds of sounding to first identify leak noises and then confirm/pinpoint individual leak sources.

horizontal plate attached to a strong, metal, vertical spike. Crew members should also have safety equipment, including safety vests, traffic cones, and barricades. Tools to measure flow rates should be provided, including a stopwatch, bucket, measuring cup, pressure gauge, and measuring wheel or tape. Standard water utility working tools, such as meter-box lid lifters, valve-cover lifters, valve keys, curb-stop keys, small bailing cans or small manual pumps, chalk or spray paint to mark street surfaces, pipe locators, and wrenches for tightening meter-spud nuts, should also be provided. Vehicles should be provided with good light characteristics and reflectors.

5. Provide crew members with appropriate training before conducting leak detection work. Instruction on the use of electronic leak detection equipment is available from equipment manufacturers or consultants, or sponsored by AWWA or water operator organizations. Certain state or regional water agencies offer both training and loaner equipment for utilities to undertake periodic leak detection work.

6. Consider the following, when scheduling the leak detection survey:

   a. What types of ambient noises exist in the service area that may conflict with leak detection soundings? Noise interference comes from electric transformers, building pumps, underground transportation systems (subways), traffic, and other sources. Noise interference can also come from activity associated with the water system including nearby pumping, throttled or nearly closed valves, air releases, and users who routinely consume water at night. Urban areas have more noise than rural areas.

   b. What time of day or night will be most effective to conduct the listening survey? Many large city water utilities schedule crews at night to avoid heavy daytime traffic and noise.

   c. What type of protection is required for the leak crew when working in high-traffic or unsafe areas? Crews working at night require additional safety equipment than those working strictly in daylight.

   d. What sequence is most effective to pinpoint suspected leaks? Some utilities concentrate on the initial listening phase for several days and pinpoint leaks at the end of the week.

   e. What is the most effective route to follow in conducting leak detection? If DMAs are in place, high minimum-hour flows will set leak detection priorities. If leak detection is scheduled on a periodic basis, historically leak-prone areas warrant more frequent leak surveys than less leak-prone areas of the system.

   f. What is the key leak survey and repair information to be captured? Forms should be designed and record-keeping procedures established. See the sidebars on pages 149–153 for sample forms for planning and documenting the leak detection activity. Documentation is critical to identify leak trends in the system, measure program effectiveness, and to counter damage claims arising from leakage impacts on public or private property. Leak detection and repair information should be part of the work order management system.

   g. How will leak detection crews communicate and work with repair crews to ensure effectiveness and resolve *dry holes* that occur when repair crews excavate but find no leaks where the leak detection crew instructed them to dig? *Note: leak detection does not abate leaks; only the repair or rehabilitation action can actually eliminate the leakage. Pressure management can reduce leakage rates and inhibit new leaks from occurring.*

Conducting manual leak detection surveys. Water utility personnel often discover leaks fortuitously in the normal course of work, such as in valve exercising,

fire hydrant flushing, and meter reading. Conducting a *leak detection survey*, however, means pursuing a systematic surveillance of the water distribution system to find hidden, unreported leaks. Many utilities survey their distribution systems according to zones or areas outlined on maps. Other utilities prioritize meter reading routes that may minimize distances in covering the system. Many target high leakage areas more often than low leakage areas. It is important to recognize that leaks are continuously forming in water distribution systems and, while leak repairs remove leakages, potential always exists for new leaks to form. A leak could occur the day after leak repairs are conducted, the day before the next survey starts, or at any time in between. Therefore, the average awareness time for leaks occurring between surveys is one half of the time interval between the surveys. If leak detection and repair are conducted annually, the average run time for new leaks occurring is one half of the year, or 182.5 days. Knowing the average run times of leaks based on leak survey frequency is important when performing component analysis.

The process for conducting leak surveys can be segregated into four phases.

1. Initial listening survey
2. Relistening to suspect sounds
3. Leak pinpointing
4. Leak repairs and confirmation of pinpointing

These phases are detailed in the following sections.

Initial listening survey. During this phase, a trained operator conducts an initial listening survey of a large portion of, or the entire, distribution system, recording all suspect sounds. Leak detection is a process of discovery and elimination. The goal is to discover the contact points where leaks can be heard and eliminate the contact points where leak sounds are not heard. A contact point is any accessible connection to the water main that transmits sound vibrations. This can be a fire hydrant, curb stop, valve, or probe rod. The addresses should be noted of all locations where water use, meter sounds, or possible leak sounds exist. This initial search through each area of the system can be conducted quickly. Prior to the start of the listening survey, a leak detection and repair plan should be prepared. A sample plan is shown in the sidebar beginning on page 149. A blank form is included in Appendix A. The sidebar on page 154 is a sample log used in documenting the findings of the leak detection survey.

Sound travels a long distance on metallic mains, so listening at contact points allows the listener to hear the sounds of leakage along the length of the main between the points. Sound travels roughly half the distance on nonmetallic mains, such as polyvinyl chloride (PVC), and additional effort is required during listening surveys on nonmetallic pipe. If sound does not carry the entire length of the pipe from one contact point to another, and no other contact points can be found in between, the leak detection staff needs to listen over the main itself with a ground microphone.

A number of factors influence how far sound will travel along nonmetallic lines, including system pressure and pipe diameter. The sensitivity of listening equipment also limits the length of pipe along which sounds can be heard.

To determine whether it is necessary to listen directly over mains in addition to contact points, perform the following test:

1. Listen over the main with a ground microphone.
2. Have a co-worker turn on a hose bib at a customer's service.
3. Determine how far along the main the sound of water escaping from the hose bib can be heard.

If the distance between contact points is greater than the distance that the sound travels along the main, the ground microphone should be used to listen over the main at appropriate intervals between 10 ft and 50 ft.

A number of sounds can interfere with leak detection equipment. Sounds from customer consumption inside a dwelling include use of showers, toilets, washing machines, pumps, and meters. Even the sound of people talking may be picked up by listening equipment. Sounds from outside a dwelling can be caused by aircraft, wind and rain, street traffic, interference from power lines or transformers, radio broadcasting, or lawn watering. Sounds from water noises usually come from adjacent leaks, valves, or turbulence. All of the sounds may be transmitted through leak detection equipment, making it difficult to isolate and identify leak noises. Faulty equipment, loose electrical connections, improper training, or system pressure less than 15 psi can also obscure or modify leak noises.

Relistening to suspect sounds. Because of variations in extraneous noise, even at night, it is often beneficial to revisit suspicious noise areas at a later time. The high-frequency contact microphone should be used to listen again for the sounds heard earlier. If the location is quiet, there is no leak. Where practical and where sounds are heard, the meter should be checked to see if it is running; a running meter indicates water consumption. If the meter cannot be accessed, it may be useful to return when the customer is present to view the meter or briefly shut off the service at the curb stop to determine if the source of noise is coming from the customer side of the curb shutoff (see section Leak Pinpointing). If sounds can still be heard when there is no water being consumed, a leak probably exists. That leak must be pinpointed.

Limitations of acoustic leak detection surveys. The use of acoustic listening instruments is a proven procedure for identifying and localizing hidden leakage. However, research organizations and practical experience have demonstrated that acoustic listening only on valves and hydrants or the ground surface leads to many unreported leaks being overlooked. Consequently, for effective leakage-reduction programs using acoustic surveys, soundings should also be performed on all service connections.

The major disadvantages of this approach include the following factors:

- This approach is labor intensive.
- A higher skill level of personnel is required.
- It is difficult to maintain efficient performance.
- There are low daily coverage rates.
- Locating customer service connection piping is often difficult and slow.
- There is limited success on nonmetallic pipes.

Acoustic leak survey results can be optimized by using nighttime operations, uninterrupted listening, and extended listening periods. Nighttime operations add to the safety risk and cost of the work. Automated leak detection methods are a new alternative to the conventional leak detection survey and may improve the efficiency of the leak detection process.

Automating acoustic leak detection surveys. The section Leak Noise Monitors discusses the technology that provides an automated way to conduct area-wide or localized leak detection surveys. This technology includes leak noise loggers (LNLs) and leak noise transmitters (LNTs). Leak noise monitors technology gives the capability of consistent listening and sound recording, and reduces labor needs. In 2005, American Water began a successful trial using LNT technology in conjunction with an existing AMR system to detect leak sounds and communicate their position using the

same communication network that sends the customer meter reading.[8] Small LNTs are attached to customer service connection pipes at specified intervals. These devices monitor sound during the overnight period and select the time of least noise and communicate the data through the AMR system for evaluation at the distribution office. As suspected leaks are identified, staff is dispatched with a leak noise correlator to confirm a leak and pinpoint its location in one trip. An increasing number of leak detection firms are working with AMR firms to provide variations to this approach. This is an outstanding example of an application employing new technology in an innovative manner to optimize leak detection capability, reduce labor needs, and improve efficiency.

Because the LNT finds leaks when they become audible, a well-spaced deployment of the LNT units can find many leaks at an early stage. For systems with slowly developing leaks (customer service connection piping leaks, pipe joint leaks, and main corrosion leaks), the discovery of leaks and their approximate location at an early stage can significantly reduce unreported leakage loss. Such small leaks can run for an extended period at relatively low flows that may be below discernable capabilities of a DMA. The economics of repairing such low flow leaks can be based on the benefits from prevention in avoiding eruption into larger leaks or main breaks, rather than the lost water cost alone. However, the LNT can have appreciable lost water benefit where the cost of water (CV) is high or the area is prone to nonsurfacing leakage.

In addition to the approach used by American Water, which mounts small LNTs on customer service connection piping within customer premises, LNTs that are designed for mounting on distribution systems appurtenances, such as valves, are now being manufactured. These devices are designed to communicate within a fixed network AMR system, just as the LNTs communicate within the AMR configuration.

Integrating leak detection methodologies. The most effective leakage management approach uses the appropriate combination of leakage control techniques as shown in Figure 5-1. Continuous flow monitoring in DMAs provides detection of rising leakage levels, and suggests the opportune time to launch leak detection activities, whether manually or via leak noise loggers. Where applicable, pressure management slows the occurrence of new leaks and can reduce leakage rates from background leakage and unreported leaks. Additionally, water utilities should employ both optimized repair functions and a long-term rehabilitation/renewal program. The proper application and combination of these useful technologies will serve as the best approach to economic leakage management for most water utilities.

Leak pinpointing. The objectives of pinpointing leaks are (1) to determine whether the leak sound is leakage, customer water consumption, or some other noise; and (2) to determine the leak's exact location. Pinpointing the leak can take place with a subsequent field trip after a conventional leak detection survey or it might be conducted during the leak detection listening or relistening survey. The latter practice is more likely performed when working at night to avoid high noise. Where customer service leaks are suspected as a leak source, a daytime inspection when the customer might allow access to the meter and plumbing may be preferred.

After the initial listening survey, the leak detection team should return to locations of suspected leaks and again listen for the leak sounds. The area should be inspected, paying attention to both sight and sound, using a sonic amplifier and a digital readout, if possible. What might be a leak sound may actually be caused by a PRV, electrical transformer, or other interference.

The survey team should review detailed distribution system maps and locate PRVs, forgotten valves, or other system apparatus that might make the suspect sound. If, when inspecting the area, another possible cause of the sound is found, the sound should be isolated and identified or quieted temporarily. For example, a customer PRV

can be isolated by shutting off the customer service and then bleeding the pressure off the system by opening the customer's hose bib. It should be noted that some large consumers (apartment complex, hospital, three-shift industries) can use water on a more or less continuous basis and generate a leak-like sound. The customer should be contacted before shutting off the service. During inspection, the team should be aware of sources of extraneous sound such as nearby electrical facilities or mechanical equipment.

If the leak noise is heard on a customer water meter, the team should listen carefully for leak sounds on both sides of the meter. A determination should be made whether the sound is louder on the customer side or the utility side of the meter. Look for obvious signs of customer use, such as sprinklers operating. In this case, the meter may be heard turning, even if the meter hand is not moving. The meter indicator should then be checked for movement; the leak may be in the area of the meter box.

If it is difficult to identify which side of the meter the leak is on, the customer should be notified that the service will be shut off for a few minutes. The angle or curb stop should be closed, and the system pressure bled from the customer's line by opening the hose bib. If the leak sound stops, the leak is either within the meter box, on the customer's service connection piping, or in the dwelling. If the noise continues, the leak is on the water utility's side of the meter. If the leak is on the customer side of the meter, the customer should be notified that there may be a leak on the customer service connection piping, interior plumbing, or water-using fixtures. Water utilities typically have policies in place stating how customer service connection piping and plumbing leaks are to be addressed.

If a leak is on the water main or the customer service connection piping, the leak sound may be detectable on adjacent service meters, valves, or hydrants. Listen for sounds of leakage on services adjacent to the suspected meter and determine where the sound is the loudest. Pinpointing the exact location can be accomplished using several methods, as detailed in the following sections.

Ground-microphone method. The objective of this method is to find the location of the loudest leak sound over the main or customer service connection piping. The first step is to determine the exact location of the main or service. An electronic pipe locator can be used to locate the buried main or customer service connection piping. The location of the main or customer service connection piping should be marked precisely on the pavement. Other nearby pipes from which the sound might be coming should be located.

Ground microphones are either monophonic or stereophonic, depending on the manufacture. Stereo models can discern differences in intensity between two microphones, but most models have only one microphone.

When using the ground microphone for pinpointing leaks, the volume should be set relatively low at the beginning, so loud sounds will not be uncomfortable to the staff listening. The volume adjustment should be kept at the same level throughout each pinpointing sequence. If uncomfortably loud sounds are heard, the volume can be reduced for safety, and the points should be surveyed again to locate the loudest leak sounds. The ground microphone should be used to listen for leak sounds every 5 to 10 ft. Notes should be taken on the sounds intensities. If the equipment has a meter, meter readings should be made. The strongest signal usually indicates the location of the leak. The setting of the volume or other controls should not be changed during this process. Where possible, comparing sounds at points with different surface and compaction characteristics should be avoided. If this is not possible, it should be noted that the same leak sound is quieter at a loosely compacted surface than at a dense one. After pinpointing the leak, its location should be verified by relistening using the ground microphone. The ground microphone is reliable in pinpointing many leaks but

is limited by the existence of interfering noise, thickness of ground cover or pavement, and operator skill level. Ground microphones work best on flat, smooth surfaces; the ground should be prepared as best as practical, or a flat plate (thumb tack) should be used.

Correlator method. See the description given in section Leak–Noise Correlation. Leak correlators are often used directly but may also be used in conjunction with correlating electronic leak noise loggers.

Probe method. This method provides access directly to underground piping for better sounding and is used to double-check the findings when using the ground-microphone or correlator method. A small hole should be drilled through the pavement over the suspected leak, taking care not to damage the pipe. A metal rod with a handle designed not to slip through the drilled hole (T-handle or equivalent) is inserted into the hole, and a high-frequency sonic microphone is used to listen again for the sound of leakage. Additional holes through the pavement or ground may be drilled as necessary, while trying to keep the rod insertion at a consistent depth. In unpaved areas, the probe can be used as an extension to listen directly on the buried pipe.

Note: For safety and to prevent interruption of service, other utilities should be contacted for clearance before starting to drill. Many areas have a one-call, underground-protection center to clear all utilities from a single communication point of contact. After pinpointing the leak, the pavement should be marked above the exact location of the leak. All information on the leak is recorded in a detection log and turned in for work orders for repair.

In-line leak setection sensor (see Figure 5-6). See the description given in section Leak Noise Monitors for this accurate leak-locating technology, which is used mostly on large-diameter transmission piping.

The accuracy of leak pinpointing cannot be confirmed until the leak has been identified by exposing it and/or repairing it; and then perhaps by performing leak detection again to confirm the absence of leak evidence. Repair methods are discussed in detail in section Optimized Leak Repair Functions. Pinpointing should be closely coordinated with repair activities so that confirmation of the pinpointing success or failure

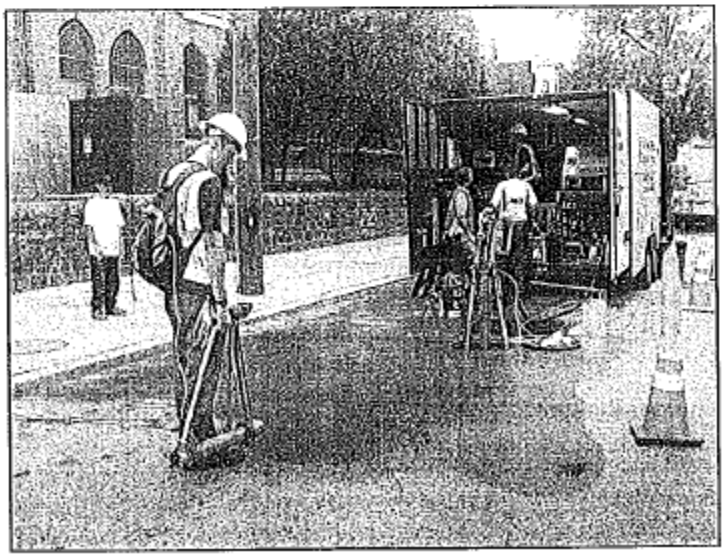


Figure 5-6 Use of inline leak detection technology in a 48-in. water main (Courtesy of Philadelphia Water Department)

is immediately known. Particularly for customer service connection piping leaks where customers arrange for repairs, leak detection personnel should stay in contact with the customer to determine if the leak detection crew accurately pinpointed the leak. Statistics on pinpointing success should be recorded so that the efficiency of the leak detection program is periodically reevaluated and improved.

There will likely be occasions where the field crew excavates and comes close but not exactly over the leak. The leak pinpointing staff should be available to investigate this condition and determine whether a better location can be found and possible reasons why the location was not precise. There will also likely be times when the repair crew excavates and finds no evidence of a leak, a dry hole. If there is no physical evidence of a leak in the area, the leak pinpointing staff must be ready to respond immediately to investigate to prevent lost crew time. The excavated point provides an opportunity to listen directly on the pipe to determine if there is a leak noise in the area. These events, though undesirable, help the leak pinpointing staff to improve their skill level in the future.

The Economics of Leak Detection

In addition to knowing how leak detection works, it is important to assemble a cost-effective basis to define the size, schedule, and functions of the leak detection program. The costs to create an in-house leak detection staff or to contract leak detection services can be considerable. Therefore, it is important that the operator defines the proper program capabilities to economically address the types of leakage occurring within the water distribution system. Leak detection economics were previously discussed, with an example calculation shown in the sidebar on pages 122–125. Additional examples illustrating economic methods are shown in the following sidebars.

Nonacoustic Leak Detection

Acoustic leak detection is just one means of detecting leaks in pressurized water piping systems. Several other techniques have been developed to identify leaks in this piping. While these techniques each have certain advantages, they also have limitations. These techniques are currently in limited use commercially, although research continues on these and other new methods.

Gas tracer method. Occasionally situations occur where leaks cannot be detected or pinpointed by traditional electrosonic or correlation methods. These types of leaks often occur as hydrostatic test failures on new pipelines during construction. They are usually small and are hard to detect. Tracer gas has proven effective for detecting and pinpointing leaks in these situations, and the technology is being developed to sense leaks on water-filled, pressurized pipelines.

The tracer gas method uses one of two potential gases: helium and hydrogen. For helium detection, the method involves dewatering the section of main or pipe being tested and injecting a gas mixture of 5 to 10 percent helium (with the balance as air) at one end of the section. A relief is kept open at the opposite end to allow the helium to flow through and fill the test section. When helium is detected at the relief end, the relief is closed. The section is then pressurized to a predetermined pressure.

For detection using hydrogen gas, it is not necessary to dewater the main because the mixture (less than 5 percent) is injected in a liquid form into the water. The gas mixture is a standard mixture of 5 percent hydrogen in nitrogen, purchased already mixed from a gas supplier. **CAUTION: The actual blending of hydrogen and nitrogen is a highly hazardous operation that should only be undertaken by the gas supplier.** Do not handle hydrogen gas in any form other than ready-mixed

Appendices N- Leak Detection Daily Log

LEAK DETECTION SURVEY DAILY LOG

Name of Water Utility: *County Water Company* Date: *April 17, 2007*

Leak Detection Team Members: *Lloyd Williams and Raymond Smith*

Equipment Used: *Leak noise loggers and ground microphone*

Area Surveyed: *7* Map Reference: *Water Distribution Map*

Street and Block Numbers: *San Antonio, San Gabriel* Page & Coordinates: _____

San Juan, San Carlos, San Luis, San Miguel 8600 Block

Leak Number	Location or Address of Suspected Leak	Utility or Customer (U or C)	Leak Pinpointed? (Y or N)	Leak to be Rechecked? (Y or N)	Leak Repaired? (Y or N)	Not a Leak? (Date)
51	8959 San Antonio	U	Y	N	Y	
52	NW Cor. Firestone & San Gabriel	U	Y	N	Y	
53	SW Cor. Firestone & San Gabriel	U	Y	N	Y	
54	SW Cor. San Juan & Southern	U	Y	N	Y	
55	8990 San Antonio	U	Y	N	Y	
56	8996 San Carlos	U	Y	N	Y	
57	8921 San Luis	U	Y	N	Y	
58	8659 San Miguel	U	Y	N	Y	

	Meters/ Curb Stops	Hydrants	Valves	Test Rods	Other
Indicate Number of Manual Listening Points Used	483	43	88	0	0
Indicate Number of Leak Noise Logger Listening Points Used	0	0	12	0	0
Miles of Mains Surveyed	3.14	Survey time		16	Hours
Number of Leaks Suspected	8	To be rechecked		8	(Number)
Number of Leaks Pinpointed	0	Pinpointing time		0	Hours

Remarks

Found a 50/50 percentage between stem packing leaks and small service meter leaks. Also found two customer sprinkler system leaks; violation notices were delivered to each customer informing them that they are required to arrange for repairs within 10 days.

Appendix-P Consumer Expenditure Survey

Consumer Expenditure Survey	
Original Data Value	
Series Id:	CXUWATERLB0101M
Category:	Expenditures
Subcategory:	Housing
Item:	Water and other public services
Demographics:	Quintiles of income before taxes
Characteristics:	All Consumer Units
Years:	2004 to 2014

Year	Annual
2004	327
2005	366
2006	397
2007	434
2008	446
2009	481
2010	489
2011	501
2012	525
2013	509
2014	530
	38%
	10
	3.8%

Appendices Q-Propagation Study

A Vender has not been selected and these are for Reference only

Customer Name: City of Roswell	**Date:** 6/3/2015	**RF Engineer:** Jeff Lewis
City/State or Country: Roswell NM	**Meter Type:** Water	**Version:** 1
Number of Meters Analyzed: None - Polygon	**Smart Point Location:** Pit - Outdoor	**FSK and Attenuation Value:** 13 FSK

BTS Name	Latitude	Longitude	Total Structure Height (Feet)	Proposed Antenna Centerline (Feet)	Base Antenna Type	Base Antenna 3dB Beamwidth (Degrees)	Base Antenna Azimuth (Degrees)	Base Antenna Mechanical Tilt Downtilt (+) Degrees Uptilt (-) Degrees	Preferred Antenna Installation Azimuth (Direction)	Sq Mile Coverage	Uncovered Sq Mile Coverage
Airport Water Tower	33.311988	-104.515479	120	125	BCD-87010-25	360	0	0	N/A	82.30	4.87
FCC ASR 1003382	33.416667	-104.511389	208	169	BCD-87010-25	360	0	0	N/A	62.37	24.80

The meter counts indicated for the individual sites are cumulative in nature, and coverage overlap is involved.

Best Server Coverage	>> Best Server Coverage is the Composite Coverage for all sites proposed >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	87.17	0
Meters Read @ Contract RIS Rate		N/A	

FlexNet Design

Propagation Analysis

City of Roswell

Roswell NM

RF Engineer: Jeff Lewis
Date: 06/03/2015
Version: 1

Airport Water Tower
FCC ASR 1003382

FSK: 13
Meter Type: Water
Smart point Location: Outdoor

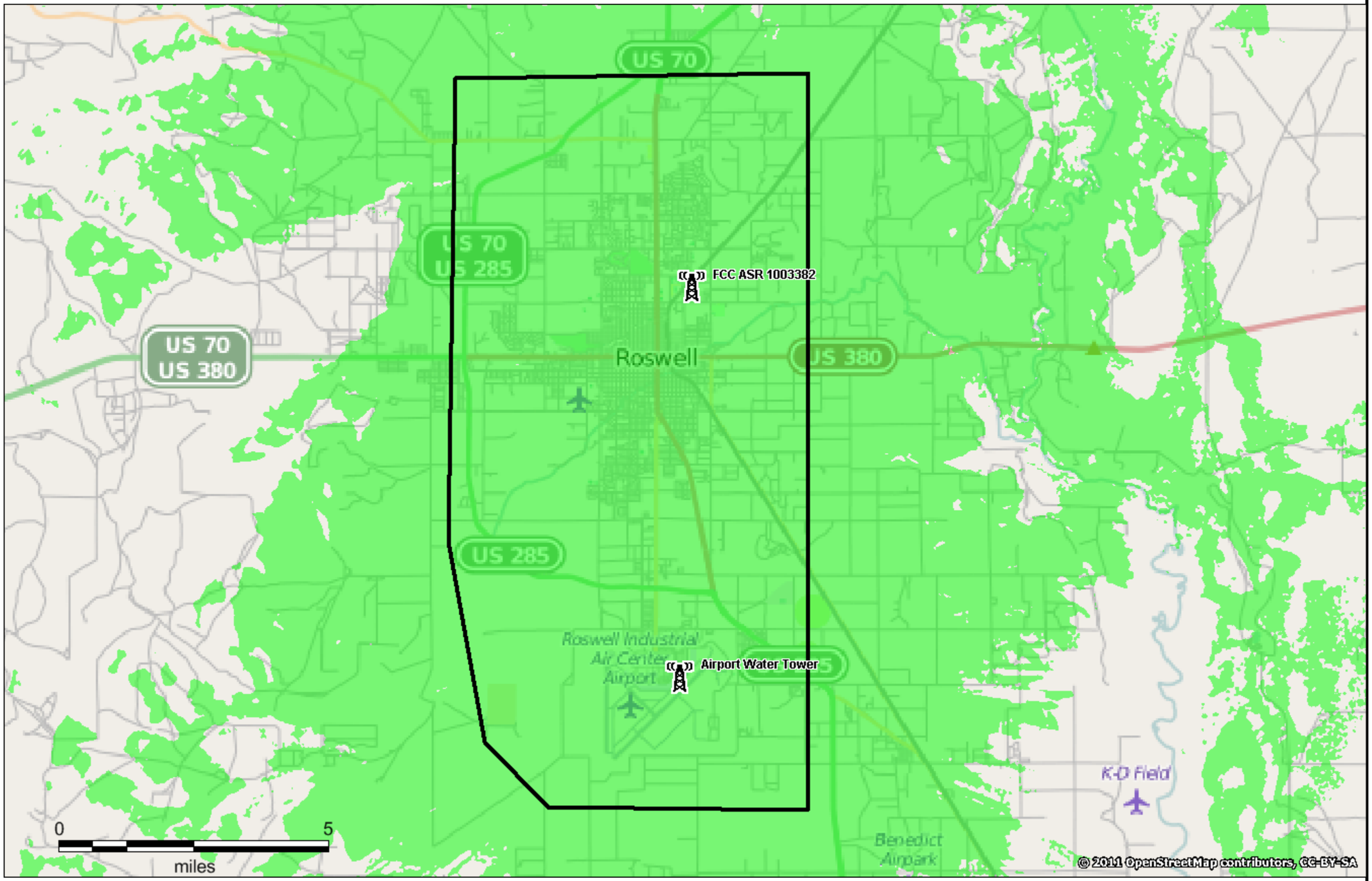
Attenuation applied due to Smart point Location: 5 db

Category	Area (sq.mi.)
Covered	87.17
Not Covered	0
Meters Read @ Contract RIS Rate	N/A
Total Meters Analyzed	*N/A*

LEGEND:

Area of Coverage

Base Station



This propagation study is based on actual information provided by the utility pertaining to meter type, Smart point Location, potential antennae height on structure, structure height, and structure location. Any changes, deletions and/or additions that are not provided to the design engineers during the creation of this design may result in a study that does not correlate to actual field conditions.

For all tower mounted antennas, a minimum antenna standoff of 3' is required from the tower.

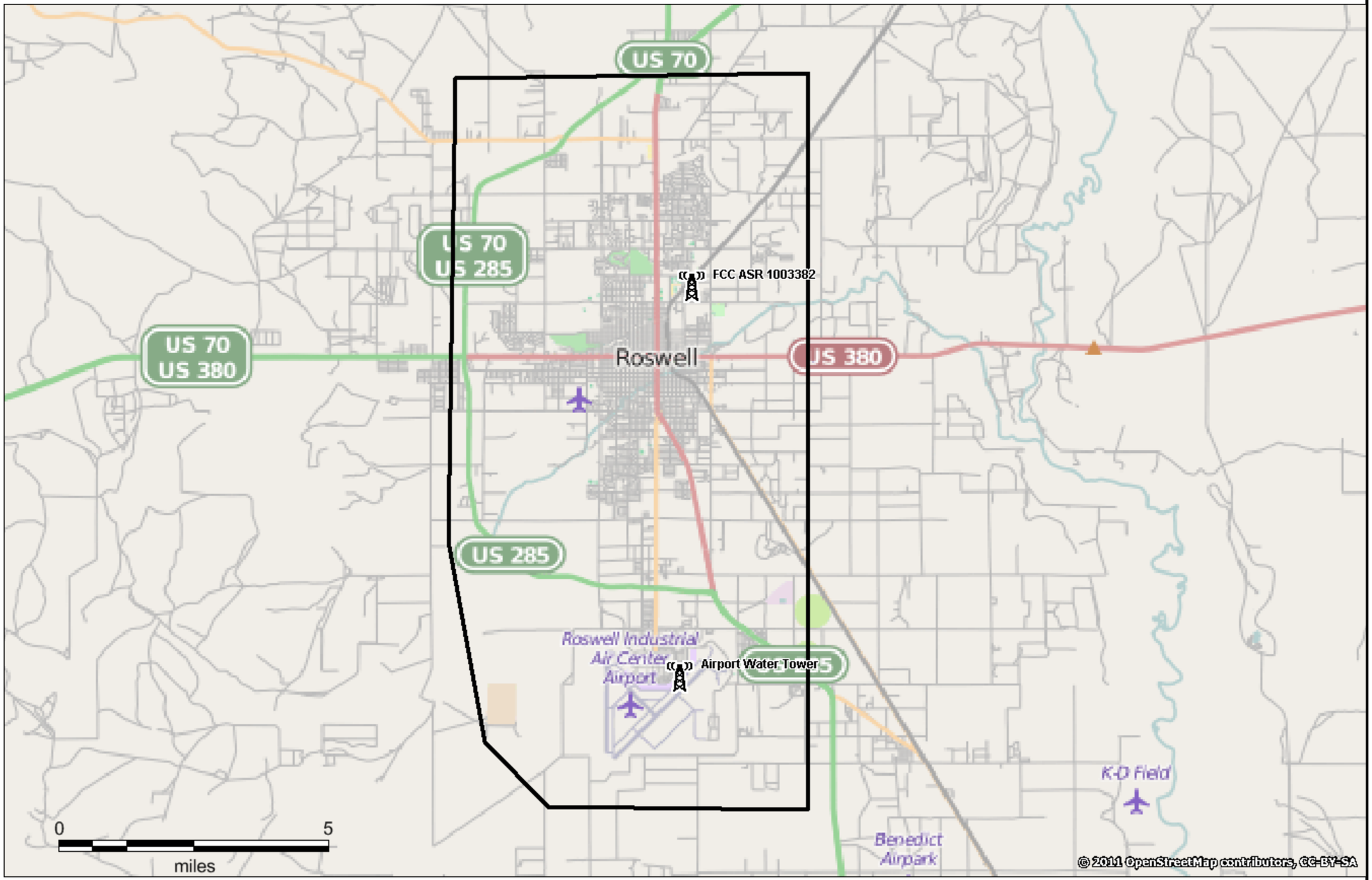
SENSUS

FlexNet Design

Base station and Meter Locations

City of Roswell

Roswell NM



LEGEND:

Base Station

This propagation study is based on actual information provided by the utility pertaining to meter type, Smart point Location, potential antennae height on structure, structure height, and structure location. Any changes, deletions and/or additions that are not provided to the design engineers during the creation of this design may result in a study that does not correlate to actual field conditions.

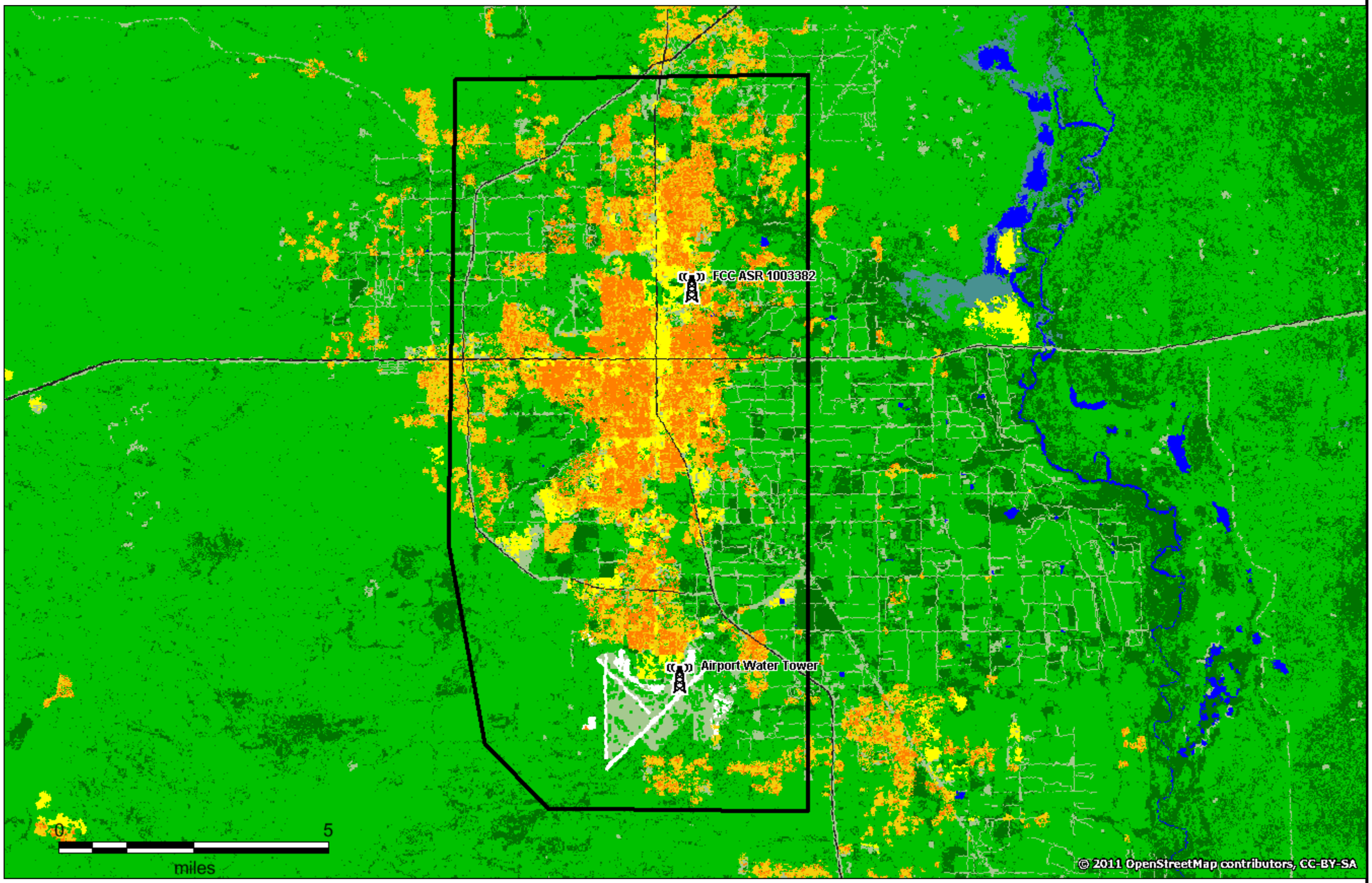
For all tower mounted antennas, a minimum antenna standoff of 3' is required from the tower.

FlexNet Design

Base station and Clutter

City of Roswell

Roswell NM



LEGEND:

- Base Station
- High Density Urban
- Commercial - Industrial
- Suburban Few Trees
- Suburban With Trees
- Airports
- Major Transportation
- Open
- Grass - Agriculture
- Forest
- Wetland
- Inland Water
- Sea Water

This propagation study is based on actual information provided by the utility pertaining to meter type, Smart point Location, potential antennae height on structure, structure height, and structure location. Any changes, deletions and/or additions that are not provided to the design engineers during the creation of this design may result in a study that does not correlate to actual field conditions.

For all tower mounted antennas, a minimum antenna standoff of 3’ is required from the tower.

SENSUS

Appendix-R Specifications

A Vender has not been selected and these are for Reference only

1-1/2”, 2”, 3”, 4”, 6”, 8” and 10” Sizes

SCOPE

These specifications set forth the minimum acceptable design criteria and performance requirements for Compound-type cold water meters including the following potential service applications and general considerations:

- Intended where a wide flow range is anticipated
- Measurement of water usage for critical billing applications
- Measurement intended for typical commercial and industrial applications requiring lower flow sensitivities
- Measurement of low flow usage below OMNI T² Meter threshold levels
- Measurement of constant low to medium flows up to high flow usage

CONFORMANCE TO STANDARDS

The meter package shall meet or exceed all requirements of ANSI/AWWA Standard C701 and C702 for Class II compound and turbine meter assemblies. Each meter assembly shall be performance tested to ensure compliance.

The meter package shall meet or exceed all requirements of NSF/ANSI Standard 61, Annex F and G.

MAINCASES

The meter maincase shall be of epoxy coated ductile iron composition. The epoxy coating shall be provided as standard fusion-bonded and adhere to NSF for non-lead regulation compliance.

PERFORMANCE

The meter assembly shall have performance capability of continuous operation up to the rated maximum flows as listed below without affecting long-term accuracy or causing any undue component wear. The meter assembly shall also provide a 25% flow capacity in excess of the maximum flows listed for intermittent flow demands. Maximum headloss through the meter / strainer assembly shall not exceed those listed in the following table per meter size.

OPERATING CHARACTERISTICS

Meter Size	Low Flow (95% Min.)	Operating Range (98.5 - 101.5%)	Intermittent Flows (98.5 - 101.5%)	Pressure Loss (Not to Exceed)
1-1/2”	.25 GPM	.5 to 160 GPM	200 GPM	6.9 PSI @ 160 GPM
2”	.25 GPM	.5 to 160 GPM	200 GPM	4.3 PSI @ 160 GPM
3”	.5 GPM	1.0 to 400 GPM	500 GPM	3.2 PSI @ 400 GPM
4”	.75 GPM	1.5 to 800 GPM	1000 GPM	6.4 PSI @ 800 GPM
6”	1.5 GPM	3.0 to 1600 GPM	2000 GPM	5.5 PSI @ 1600 GPM
8”	2.5 GPM	4 to 2700 GPM	3400 GPM	4 PSI @ 2700 GPM
10”	3.5 GPM	5 to 4000 GPM	5000 GPM	4.5 PSI @ 4000 GPM

MEASURING CHAMBER

The measuring chamber shall consist of a measuring element, removable housing, and all-electronic register. The measuring element shall be mounted on a horizontal, stationary stainless steel shaft with sleeve bearings and be essentially weightless in water. The measuring element comes integrated with the advanced Floating Ball Technology design. The measuring chamber shall be capable of operating within the above listed accuracy limits without calibration when transferred from one maincase to another of the same size. The measuring shall be so configured to capture all flows as specified above, without the requirement of an automatic valve.

DIRECT MAGNETIC DRIVE SYSTEM

The direct magnetic drive shall occur between the motion of the measuring element blade position and the electronic register. The OMNI direct drive system with Floating Ball Technology is designed to extend service life, enhance low flow sensitivity and provide extended flow capacity and overall accuracy of the meter assembly. Any and all additional intermediate, magnetic or mechanical, drive couplings are not acceptable.

ELECTRONIC REGISTER

The meter’s register is all-electronic and does not contain any mechanical gearing to display flow and accurate totalization. The electronic register includes the following patial list of features:

- AMR resolution units fully programmable
- Pulse output frequency fully programmable
- Integral data logging capability
- Integral resettable accuracy testing feature
- Large, easy-to-read LCD display
- 10-year battery life guarantee

MAXIMUM OPERATING PRESSURE

The meter assembly shall operate properly without leakage, damage, or malfunction up to a maximum working pressure of 200 pounds per square inch (psig).

STRAINERS

The meter strainer shall be integral and cast as part of the meter's maincase. The strainer's screen shall have a minimum net open area of at least two (2) times the pipe opening and be a V-shaped configuration for the purpose of maintaining a full unobstructed flow pattern. The strainer body shall be a coated ductile iron fusion-bonded epoxy identical to that of the meter's maincase. All fasteners shall be stainless steel capable of maintaining the following static pressure ratings and physical dimensions:

Meter Size	Maximum Working Pressure	Centerline to Strainer Base	Overall Length (Not to Exceed)
1-1/2"	200 PSIG	2-5/16 INCHES	13 INCHES
2"	200 PSIG	2-5/16 INCHES	15-1/4 INCHES
3"	200 PSIG	4-1/8 INCHES	17 INCHES
4"	200 PSIG	4-3/4 INCHES	20 INCHES
6"	200 PSIG	5-3/4 INCHES	24 INCHES
8"	200 PSIG	6-3/4 INCHES	30-1/8 INCHES
10"	200 PSIG	8-1/2 INCHES	41-1/8 INCHES

STRAIGHTENING VANES

A straightening vane assembly is mandatory and shall be positioned directly upstream of the measuring element. The straightening vane assembly shall be an integral component of the measuring chamber.

CONNECTIONS

Flanges for the 1-1/2" and 2" size meter assemblies shall be of the 2-bolt oval flange configuration. The 3", 4", 6", 8" and 10" size meter assemblies shall have flanges of the Class 125 round type, flat faced and shall conform to ANSI B16.1 for specified diameter, drilling and thickness.

CERTIFICATIONS AND MARKINGS

All sizes of meter packages shall display the sizes, model, manufacturer name, and direction of flow. Such display shall be cast on the side of the meter maincase.

GUARANTEE AND MAINTENANCE PROGRAM

Meters shall be guaranteed against defects in material and workmanship for a period of one (1) year from date of shipment. In addition, the meter supplier shall submit nationally published literature clearly outlining its factory maintenance program and current price schedule covering complete measuring chamber exchange.

INTENT

Subject meter specifications are designed to establish minimum guidelines for selecting an extremely critical metering device. Areas of concern to be evaluated in the selection process include, but are not limited to, ease of installation, operational features and benefits, readability and future system maintenance expense. A design, which reflects longevity of proper operation in all elements and high degree of sustained accuracy within the entire range of the meter assembly, is to be considered mandatory. Enhanced accuracy levels and performance are desired and will not be compromised.

RECOMMENDATION

Sensus OMNI C^2 Meter

8601 Six Forks Road, Suite 700
Raleigh, NC 27615
1-800-638-3748
www.sensus.com/water

ally® Water Meter

Electromagnetic Flow Measurement with 3-State Valve

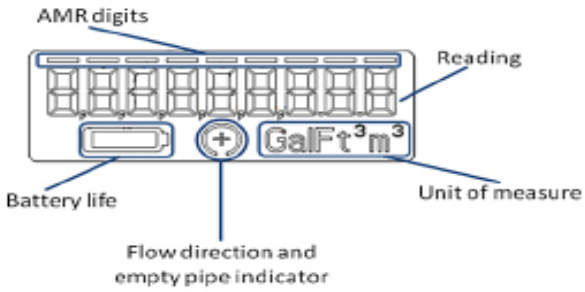
Description

5/8" (DN 15mm), 3/4" (DN 20mm) and 1" (DN 25mm) Sizes

The Sensus® ally® water meter combines smart water technology, a 3-state valve, and temperature and pressure sensors. You can now optimize your distribution system and utility operations with one meter. ally has no moving parts and is based on our innovative electromagnetic flow measurement technology. The ally family has an operating range as low as 0.03 gpm (0.007 m^3/hr) to 55 gpm.

Benefits:

- Fewer truck rolls for service shut-off
- Quicker service shut-off
- Better customer service and fewer service calls
- Energy optimization
- Freeze detection
- Pressure management



Electronic Register LCD Display

Features

CONFORMANCE TO STANDARDS

The ally meter far exceeds the most recent revision of ANSI/ AWWA Standard C-700 and C-710 for accuracy and pressure loss requirements. All ally meters are NSF/ANSI Standard 61 Annex F and G compliant and tested to AWWA standards.

PERFORMANCE

The patented measurement technology of the ally meter allows enhanced accuracy ranges at both low and high flows and perpetual accuracy over the life of the product and can be installed horizontally, vertically or diagonally.

CONSTRUCTION

The ally is an integrated unit that incorporates an electronic register, 3-state valve, temperature sensor, pressures sensor, and a measuring device encased in an external housing. The measuring device is comprised of a composite alloy flowtube with externally-threaded spud ends. Embedded in the flowtube are magnetic flow sensors. The all electronic, programmable register is hermetically sealed with a tempered glass cover. The ally meter has a 20-year life cycle, along with a 20-year accuracy warranty.

ELECTRONIC REGISTER

The high resolution 9-digit hermetically sealed electronic register with LCD display was designed to eliminate dirt, lens fogging issues and moisture contamination in pit settings with built in tamper protection. The tempered glass register cover displays readings with the AMR digits highlighted. Direction of flow, rate of flow and units of measure are also easily readable on the register display. The ally register features programmable AMR resolution and unit of measure, and integral customer data logging of 90-120 days. The large, easy to read display includes battery life, empty pipe and forward/reverse flow indicators. Additionally, the register displays temperature and pressure values along with programmable high/low alarms.

SHUT-OFF VALVE

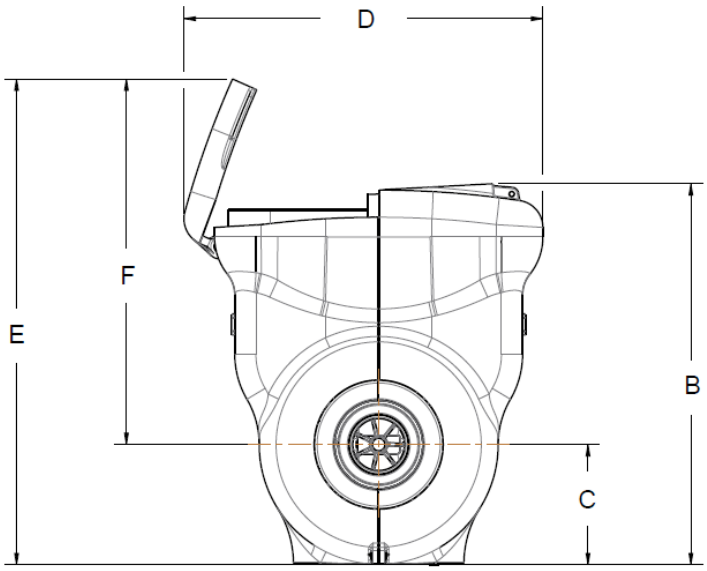
The shut-off valve has 3 states-- open, closed, and reduced flow. Reduced flow mode allows 1-2 GPM on average for life-sustaining applications (based on 65 psig). The stainless steel ball valve is self-cleaning and remains functional due to automatic seat exercising. The ally meter also contains a proprietary actuator to operate the valve.

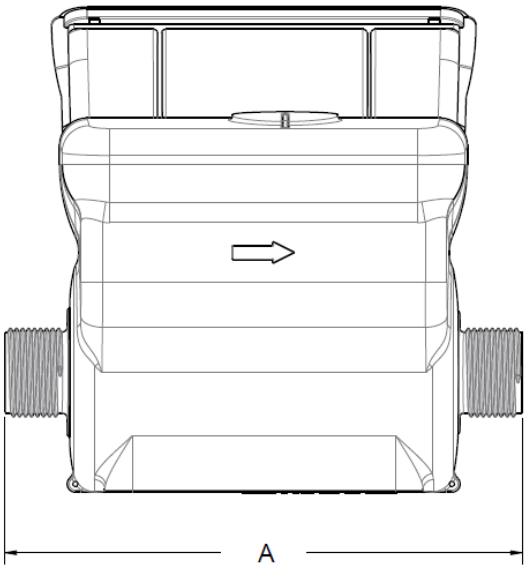
TAMPERPROOF FEATURES

The integrated construction of the ally meter prevents removal of the register to obtain free water. The magnetic tamper and low field alarms will both indicate any attempt to tamper with the magnetic field of the ally meter.

AMR / AMI SYSTEMS

ally meters are compatible with current Sensus AMR/AMI systems.





DIMENSIONS AND NET WEIGHTS

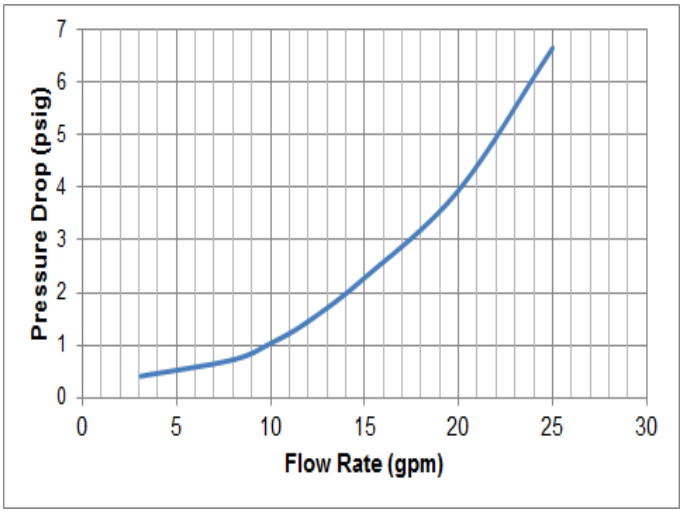
Size	A (lay length)	B	C	D	E	F	Spud Ends	NPSM Thread Size	Width	Net Weight
5/8" (DN 15 mm)	7-1/2" (190 mm)	5-1/2" (140 mm)	1-3/4" (44 mm)	5-1/5" (132 mm)	7" (178 mm)	5-3/10" (44 mm)	5/8" (15 mm)	3/4" (19 mm)	4-1/2" (114 mm)	3.3 lb. (1.5 kg)
3/4"S (5/8" x 3/4") (DN 20 mm)	7-1/2" (190 mm)	5-1/2" (140 mm)	1-3/4" (44 mm)	5-1/5" (132 mm)	7" (178 mm)	5-3/10" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.3 lb. (1.5 kg)
3/4" (DN 20 mm)	9" (229 mm)	5-1/2" (140 mm)	1-3/4" (44 mm)	5-1/5" (132 mm)	7" (178 mm)	5-3/10" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.4 lb. (1.54 kg)
1" (DN 25 mm)	10-3/4" (273 mm)	5-1/2" (140 mm)	1-3/4" (44 mm)	5-1/5" (132 mm)	7" (178 mm)	5-3/10" (44 mm)	1" (25 mm)	1-1/4" (32 mm)	4-1/2" (114 mm)	3.5 lb. (1.59 kg)

SPECIFICATIONS

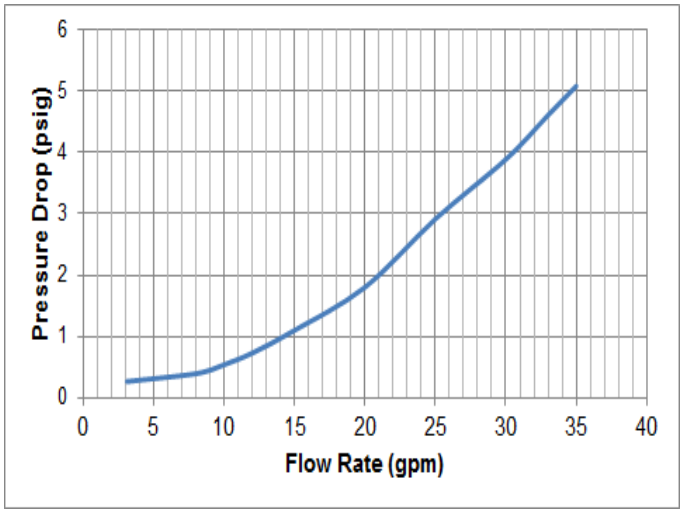
SERVICE	Measurement of potable and reclaim water. Operating water temperature range of 33 °F (0.56 °C) - 150 °F (65.6 °C)
NORMAL OPERATING FLOW RANGE (±1.5%)	5/8" (DN 15mm) size: 0.18 to 25 gpm (0.04 to 5.7 m^3/hr) 3/4" (DN 20mm) size: 0.18 to 35 gpm (0.04 to 8.0 m^3/hr) 1" (DN 25mm) size: 0.4 to 55 gpm (0.09 to 12.5 m^3/hr)
LOW FLOW RANGE (±3%)	5/8" (DN 15mm) size: >0.11 gpm (0.025 m^3/hr) to <0.18 gpm (0.041 m^3/hr) 3/4" (DN 20mm) size: >0.11 gpm (0.025 m^3/hr) to <0.18 gpm (0.041 m^3/hr) 1" (DN 25mm) size: >0.3 gpm (0.068 m^3/hr) to <0.4 gpm (0.09 m^3/hr)
STARTING FLOW	5/8" (DN 15mm) size: 0.03 gpm (0.007 m^3h) 3/4" (DN 20mm) size: 0.03 gpm (0.007 m^3h) 1" (DN 25mm) size: 0.11 gpm (0.025 m^3h)
MAXIMUM OPERATING PRESSURE	200 psig (13.8 bar)

MEASUREMENT TECHNOLOGY	Solid state electromagnetic flow
REGISTER	Hermetically sealed, 9-digit programmable electronic register AMR/AMI compatible Programmable ally meter register
MATERIALS	External housing – Thermal plastic Flowtube – Polyphenylene sulfide alloy Electrode – Silver/silver chloride Register cover – Tempered glass
ALARM DEFAULTS	Alarm Duration – 45 days Leak Duration – 24 hours Datalog Interval – 1 hour Pressure – Low: 35 psig. High – 100 psig Temperature – Low: 35° F. High – 80° F

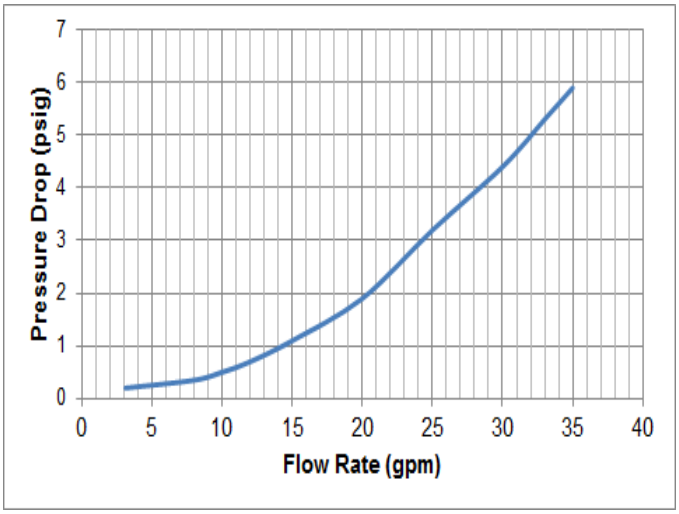
HEADLOSS CURVES



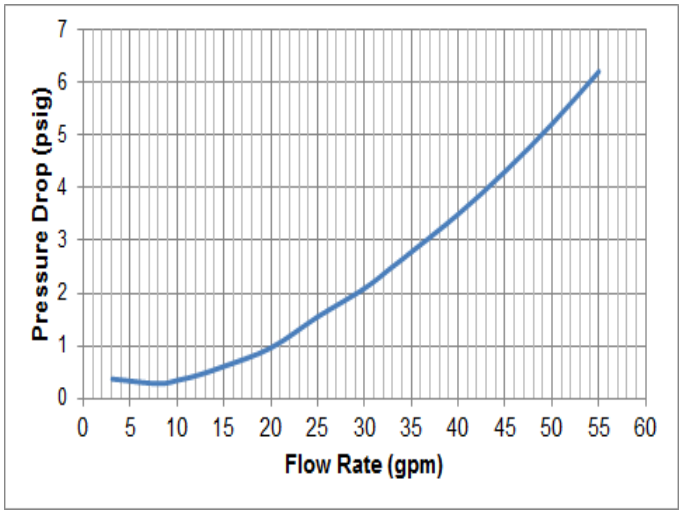
5/8" Headloss Curve



3/4" Short Headloss Curve



3/4" Headloss Curve



1" Headloss Curve

iPERL™ Water Management System

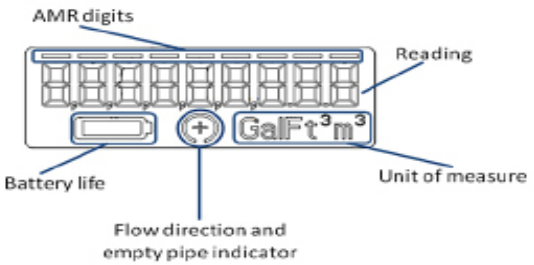
Electromagnetic Flow Measurement System

Description

5/8" (DN 15mm), 3/4" (DN 20mm) and 1" (DN 25mm) Sizes

With no moving parts, the Sensus iPERL water management system is based on innovative electromagnetic flow measurement technology. The iPERL system family has an operating range as low as 0.03 gpm (0.007 m^3/hr) to 55 gpm.

Electronic Register LCD Display



Features

CONFORMANCE TO STANDARDS

The iPERL system far exceeds the most recent revision of ANSI/AWWA Standard C-700 and C-710 for accuracy and pressure loss requirements. All iPERL systems are NSF/ANSI Standard 61 Annex F and G compliant and tested to AWWA standards.

PERFORMANCE

The patented measurement technology of the iPERL system allows enhanced accuracy ranges at both low and high flows and perpetual accuracy over the life of the product and can be installed horizontally, vertically or diagonally.

CONSTRUCTION

The iPERL system is an integrated unit that incorporates an electronic register and measuring device encased in an external housing. The measuring device is comprised of a composite alloy flowtube with externally-threaded spud ends. Embedded in the flowtube are magnetic flow sensors. The all electronic, programmable register is hermetically sealed with a tempered glass cover. The iPERL system has a 20 year life cycle, along with a 20 year battery life guarantee.

ELECTRONIC REGISTER

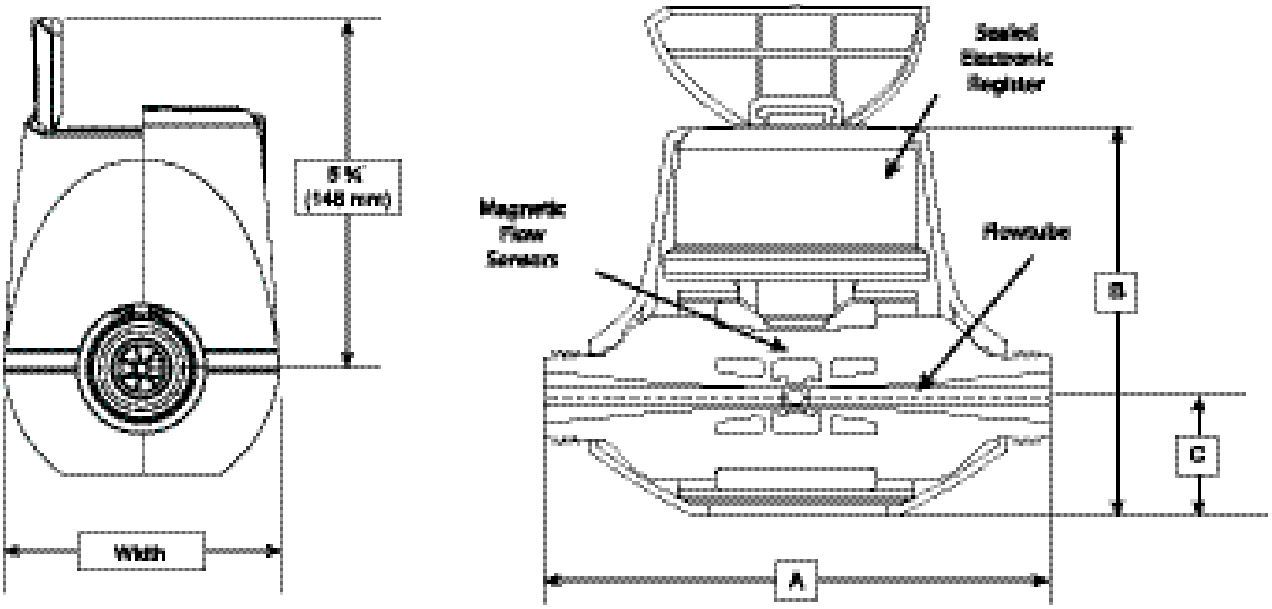
The high resolution 9-digit hermetically sealed electronic register with LCD display was designed to eliminate dirt, lens fogging issues and moisture contamination in pit settings with built in tamper protection. The tempered glass register cover displays readings with the AMR digits highlighted. Direction of flow and units of measure are also easily readable on the register display. The iPERL register features; AMR resolution and unit of measure that are fully programmable, integral customer data logging compatible with UniPro software tools. The large, easy to read display also includes battery life, empty pipe and forward/reverse flow indicators.

TAMPERPROOF FEATURES

The integrated construction of the iPERL system prevents removal of the register to obtain free water. The magnetic tamper and low field alarms will both indicate any attempt to tamper with the magnetic field of the iPERL system.

AMR / AMI SYSTEMS

iPERL systems are compatible with current Sensus AMR/AMI systems.



DIMENSIONS AND NET WEIGHTS

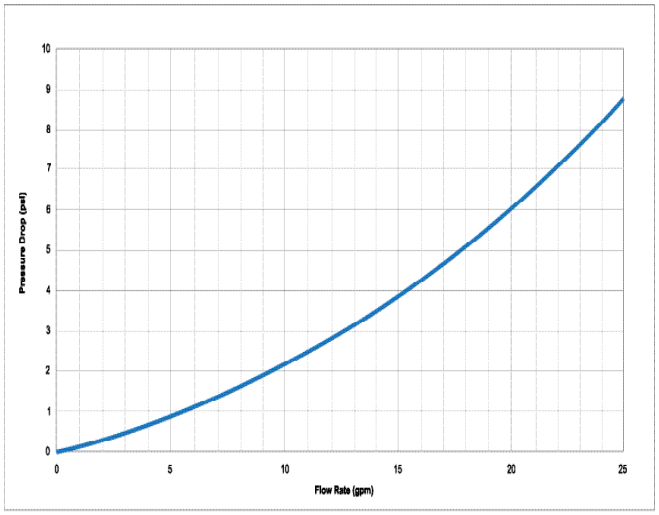
Size	A (lay length)	B	C	Spud Ends	NPSM Thread Size	Width	Net Weight
5/8" (DN 15 mm)	7-1/2" (190 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	5/8" (15 mm)	3/4" (19 mm)	4-1/2" (114 mm)	3.1 lb. (1.4 kg)
3/4"S (5/8" x 3/4") (DN 20 mm)	7-1/2" (190 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.1 lb. (1.4 kg)
3/4" (DN 20 mm)	9" (229 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	3/4" (20 mm)	1" (25 mm)	4-1/2" (114 mm)	3.2 lb. (1.5 kg)
1" (DN 25 mm)	10-3/4" (273 mm)	6-1/10" (155 mm)	1-3/4" (44 mm)	1" (25 mm)	1-1/4" (32 mm)	4-1/2" (114 mm)	3.3 lb. (1.6 kg)

SPECIFICATIONS

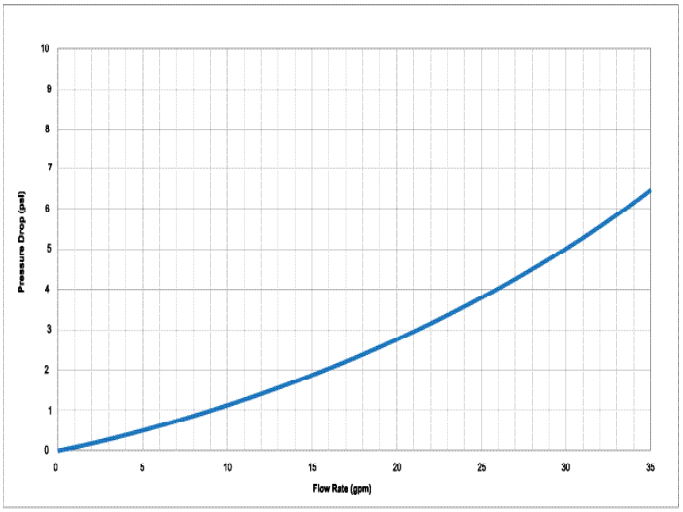
SERVICE	Measurement of potable and reclaim water. Operating temperature range of 33 °F (0.56 °C) - 150 °F (65.6 °C)
NORMAL OPERATING FLOW RANGE (±1.5%)	5/8" (DN 15mm) size: 0.18 to 25 gpm (0.04 to 5.7 m^3/hr) 3/4" (DN 20mm) size: 0.18 to 35 gpm (0.04 to 8.0 m^3/hr) 1" (DN 25mm) size: 0.4 to 55 gpm (0.09 to 12.5 m^3/hr)
LOW FLOW RANGE (±3%)	5/8" (DN 15mm) size: >0.11 gpm (0.025 m^3/hr) to <0.18 gpm (0.041 m^3/hr) 3/4" (DN 20mm) size: >0.11 gpm (0.025 m^3/hr) to <0.18 gpm (0.041 m^3/hr) 1" (DN 25mm) size: >0.3 gpm (0.068 m^3/hr) to <0.4 gpm (0.09 m^3/hr)
STARTING FLOW	5/8" (DN 15mm) size: 0.03 gpm (0.007 m^3h) 3/4" (DN 20mm) size: 0.03 gpm (0.007 m^3h) 1" (DN 25mm) size: 0.11 gpm (0.025 m^3h)
MAXIMUM OPERATING PRESSURE	200 psi (13.8 bar)

MEASUREMENT TECHNOLOGY	Solid state electromagnetic flow
REGISTER	Hermetically sealed, 9-digit programmable electronic register AMR/AMI compatible iPERL system register programmable using the UniPro programming package
MATERIALS	External housing – Thermal plastic Flowtube – Polyphenylene sulfide alloy Electrode – Silver/silver chloride Register cover – Tempered glass
ALARM DEFAULTS	Alarm Duration – 90 days Leak Duration – 24 hours Datalog Interval – 1 hour Alarm Mask – All alarms reported History Mask – All event types reported

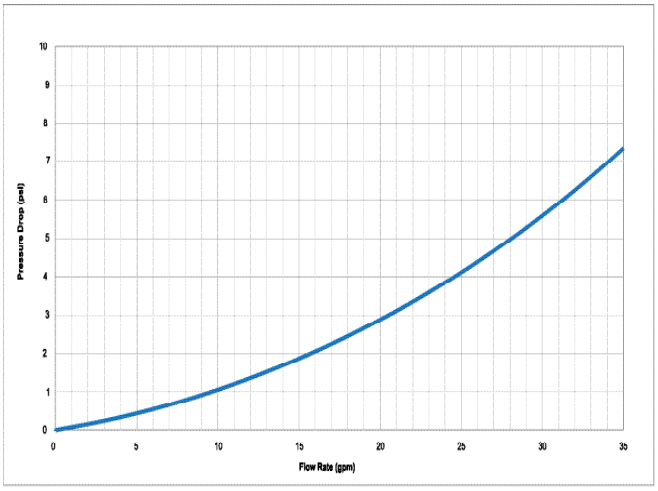
HEADLOSS CURVES



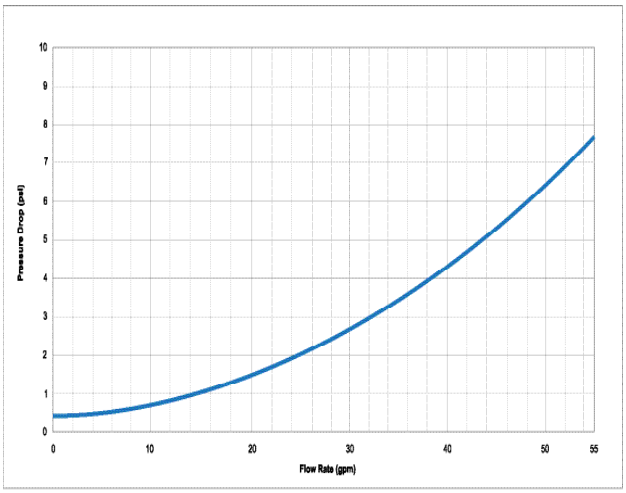
5/8" Headloss Curve



3/4" Short Headloss Curve



3/4" Headloss Curve



1" Headloss Curve

FlexNet

SmartPoint™ M2

Model 520M – Pit Set

DESCRIPTION

Application: The FlexNet SmartPoint M2 is a radio transceiver that provides water utilities inbound and outbound access to water measurement and ancillary device diagnostics via radio signal. The SmartPoint 520M is designed for submersible, pit-set environments. With its migratable, two-way communication ability, the M-Series SmartPoint functions as a walk-by/drive-by endpoint, fixed base endpoint, or combination of the two. This flexibility increases utility data collection capabilities and streamlines operations.

TouchCoupler Design: The SmartPoint M2 utilizes TouchCoupler, the patented Sensus inductive coupling communication system, to interface with the meter encoder as well as other devices. With TouchCoupler, the SmartPoint M2 can connect to the meter using existing two wire AMR installations instead of requiring utilities to access the home to install a new three-wire system. This results in a fast, efficient and reliable connection at minimal cost.

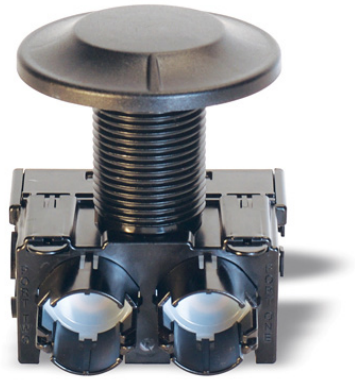
Operation: The FlexNet SmartPoint M2 receives input from the meter register and remotely sends data to a walk-by/drive-by or fixed base collection device. The SmartPoint M2 easily migrates from walk-by/drive-by to fixed base by simply installing a Tower Gateway Basestation (TGB).

In walk-by/drive-by mode, the SmartPoint M2 collects data and awaits an activation signal from the Vehicle Gateway Basestation (VGB) or Hand-Held Device (HHD). Upon signal receipt, it transmits readings, the meter identification number and any alarms.

As a fixed-base endpoint, the SmartPoint M2 interacts with one or more strategically placed TGBs located in the utility service area. Top of the hour readings and other diagnostics are instantly forwarded to the Regional Network Interface (RNI) at time of transmission. The FlexNet system provides unmatched reliability by using expansive tower receiver coverage of metering end points, data/message redundancy, fail over back up provisions and operation on FCC primary-use (unshared) RF spectrum.

Powerful Transmission, Flexible Platform: The SmartPoint M2 offers several advantages that control both deployment and lifetime operation costs. It's powerful, industry leading two watt transmitter broadcasts over large distances and minimizes collection infrastructure. And once the SmartPoint M2 is installed, its migratable, two-way system platform can be updated without requiring personnel to visit each meter and/or inconveniencing customers.

Additional SmartPoint M2 Features: The SmartPoint M2 obtains hourly readings and can monitor continuous flow over a programmable period of time, alerting the utility to leak conditions. In addition, the SmartPoint M2 stores up to 840 consumption intervals (35 days of hourly consumption), providing the utility with the ability to extract detailed usage profiles for consumer information and dispute resolution. The SmartPoint M2 also incorporates a two-port design, allowing the utility to connect multiple registers and ancillary devices (such as acoustic monitoring) to a single SmartPoint. This results in a compact installation that saves time, space and money - without reducing system performance.



SPECIFICATIONS

SERVICE	Pit set installation interfacing the utility meter to the Sensus FlexNet system. Unit requires 1.75" diameter hole in pit lid; fits pit lid thicknesses up to 1.75"
PHYSICAL CHARACTERISTICS	Width: 4.43" x Height: 5.09" x Depth: 3"
WEIGHT	1.0 lbs/16.0 oz
COLOR	Black
FREQUENCY RANGE	900 – 950 MHz, 8000 channels X 6.25 kHz steps
MODULATION	Proprietary Narrow Band
MEMORY	Non-Volatile
POWER	Lithium Thionyl Chloride batteries in conjunction with a hybrid layer capacitor (HLC)
APPROVALS	**US:** FCC CFR 47: Part 90, Part 24D, Part 101C, Part 15 Licensed operation **Canada:** Industry Canada (IC) RSS-134, RSS-119, RSS-210
OPERATING TEMPERATURE	- 22° F to +185° F *- 30° C to + 85° C*
OPTIONS	Dual or single port availability; TouchCoupler only, wired only.
INSTALLATION ENVIRONMENT	100% condensing, water submersible
COMPATIBILITY	**TouchCoupler and Wired Version:** Sensus ECRII, ICE and Badger ADE water registers **Wired Version Only:** Elster Encoder (Sensus protocol) and Neptune ARB VI (ProRead).
WARRANTY	20 years – Based on six transmissions per day. Refer to Sensus G-500 for warranty.

AUTHORIZED SENSUS DISTRIBUTOR

SENSUS

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www.sensus.com/water
h2oinfo@sensus.com

FieldLogic® Handheld Device / Programmer

Description

Standard Model - FL6501-S (Standard), FL6501-GB (GPS + Barcode Scanner)
RadioRead™ Model - FL6502-GB (GPS + Barcode Scanner)

The Sensus FieldLogic® Hand-Held Device [HHD] is primarily designed to collect and store utility meter readings with built-in capability for expanded uses. The HHD interfaces to a personal computer [PC] through Wi-Fi® or an ethernet-enabled charging stand used for uploading pre-programmed meter reading route information. The computer must be equipped with Sensus FieldLogic System software.

The Model FL6501 accepts meter reading data entered manually on a built-in keypad or electronically through the TouchRead® System AutoGun, or wirelessly with the CommandLink or FMT. AutoGun options include cable-connected and RF (no cable required) styles.

The Model FL6502 includes all features of the Model FL6501, plus it can read Sensus RadioRead® Meter Transceiver Units [MXUs].

Features

PROGRAMMING

The Sensus 6500 Series HHD provides flexibility for utilities needing a reliable electronic hand-held meter reading and programming device. They are designed for collecting meter readings as well as programming RadioRead MXUs, FlexNet™ SmartPoint™ modules, and Sensus registers. In addition to accepting meter readings via its keypad, the HHD also accepts readings from TouchRead® System and RadioRead® System equipped meters where those systems are used. All meter reader activity is stored for later analysis, including multiple data entries, bad readings, and management system analysis.

ERGONOMIC DESIGN

The HHD's ergonomic-minded design offers a well-balanced, easy-to-handle unit. It includes a Transflective (TFT) LCD screen for ease of viewing during operation. Transflective displays appear brighter in direct sunlight, and use less power than other display technologies. Brightness can be adjusted to accommodate personal preference. The HHD can be manually carried during operation, or function in the optional HHD carrier harness.

BACKLIGHTING

The backlit keypad feature provides illumination to the LCD for convenience in data entry and ease of reading data in areas with insufficient lighting.

CONSTRUCTION

The HHD is housed in a weather-resistant, high impact, UV-stabilized plastic. Surface-mounted circuitry in the specially designed, watertight case allows the HHD to be used in rugged field conditions over a wide range of temperatures.

REPLACEABLE BATTERY

The rechargeable, self-contained Lithium Ion battery pack is field-replaceable to minimize downtime. The HHD is also equipped with a lithium battery backup to maintain date and time.

AUDIBLE VERIFICATION/WARNING

The audible tone confirms completed TouchRead, RadioRead, and FlexNet System readings, or alerts the user to faulty or out-of-limit readings. Tones can also be programmed with notes to alert the meter reader to hazardous situations or to respond to field survey questions.

INTEGRATED GPS AND CAMERA

The GB[1] version of the FL6500 Series offers an integrated GPS, barcode scanner and a five (5) mega-pixel camera for more convenient field data capture. The integrated GPS can acquire accurate position data in less time and in challenging locations, without the need for an add-on module. The 5 mega-pixel camera enables capture of high resolution, full-color images as well as the ability to obtain barcode data with the same device.

SERVICE AND WARRANTY

No service should be necessary if reasonable care is given during normal use. Sensus offers the Sensus Equipment Maintenance Program (SEMP) to extend the protection of HHDs and related equipment beyond the standard two (2) year warranty covering materials and workmanship. Warranty and service policy details are available from Sensus representatives and authorized AMR distributors.

1 The "S" version does not have the GPS, barcode scanner, or camera, making it the perfect device for Direct Read, TouchRead, or FlexNet Walk-By applications.

FEATURES WITH THE SENSUS TOUCHREAD AUTOGUN

FLEXIBLE DATA ENTRY

When used with an AutoGun, the HHD automates the reading process. Reading data from Sensus and compatible absolute encoder equipped meters is obtained and stored in the HHD.
Manual entries can also be made using the keypad, which features elastomeric, tactile response keys. Pre programmed “high” and “low” range limits, calculated and passed from the utility billing software, can be sent to alert the user of possible reading errors. In addition, the Model 6502 provides expanded features for reading and programming Sensus RadioRead MXUs as well as FlexNet SmartPoints.

AUTOMATIC, ERROR-FREE DATA COLLECTION

When used with an AutoGun, the HHD collects and stores readings automatically from Sensus or compatible absolute encoders. Regardless of the route sequence programmed into memory, the HHD software identifies each meter encoder using the encoder’s internal identification number. The software then searches the route program and automatically stores the meter reading in the correct customer account. When the utility’s meter readers hear an audible alert tone from the HHD, it is alerting them to a special condition or hazard. They need only refer to instructions on the HHD screen on how to proceed. This process eliminates errors and increases meter reading speed.

CORDLESS AUTOGUN

Used in conjunction with the 6500 Series HHD, the cordless Sensus TouchRead AutoGun provides the ability to perform TouchRead readings without the need for cables from the AutoGun to the HHD. Information is stored in the AutoRead HHD through a bi-directional, low-power RF link.

SPECIFICATIONS

PRIMARY	Hand-held electronic meter reading collection and data storage device for manual, TouchRead System, RadioRead, and FlexNet meter reading.
OPTIONAL	Programmer for Sensus SmartPoints and Sensus registers.
PHYSICAL CHARACTERISTICS	Case material molded of high impact, UV-stabilized plastic. Grey color standard. Reading device/programmer connection built in. Carrying harness included.
DIMENSIONS	10.2” [259.08 mm] (H) x 5.4” [137.16 mm] (W) at display and 3.1” [78.74 mm] (W) at its narrowest point x 2.75” [69.85 mm] deep and 1.6” [40.64 mm] at its shallowest.
WEIGHT	32.03 oz (908 grams)
OPERATING SYSTEM	Microsoft® Windows® Embedded Handheld 6.5.3 Microprocessor: 1.0 GHz ARM Cortex, A8 1.MX53 Processor Operating Memory: 512 MB SDRAM Data Storage Memory: 8GB
KEYPAD	QWERTY keyboard. Large keys can be operated while wearing gloves. Adjustable backlit keys.
DISPLAY	Backlit and Transflective color LCD screen. Will display meter reading information, route information from hand-held, and any additional system information.
READING COMPATIBILITY	Able to read Sensus encoders, Sensus MultiRead Modules, Badger ADE® and Neptune Proread™ (ARB® VI).
CAMERA	5 MP resolution with autofocus, LED illuminator, and video capture
GPS	High-sensitivity GPS/GLONASS/SBAS receiver Accurate to five (5) meters or better
POWER SUPPLY	Intelligent Lithium Ion battery, 3.7VDC at 10600 mAh, 38.7 Whr 20 hour battery life, achieves full charge in 2-4 hours Field-replaceable battery
OPERATING TEMPERATURE	-22° F to 140° F (-30° to 60° C); Bluetooth® rated to -4° F (-20° C)
HOUSING	Tested to withstand being dropped on any surface from a 4 foot height without damage. Tested to MIL-STD 810G and IP68 for waterproof, dustproof, and shockproof (drop) standards.
INCLUDED ACCESSORIES	Hand Strap, Wall Charger, Micro USB SyncCable, Stylus with tether
OPTIONAL ACCESSORIES	Vehicle Charger, Replacement Battery, Single Docking Station, Quad Docking Station, Holster Carrying Case, Screen Protector, Input/Output Replacement Module
DOCKING STATION	Holds one HHD per stand. Microprocessor controlled. Load/Unload speed: 115k Baud Communications Interface: USB or Micro USB Bluetooth® Class I approved Plugs into 120 Volt, 60 Hz, AC wall outlet, power usage is 2 watts standby and 4 watts while charging Dimensions: 8.5” [215.9 mm] (H) x 6.0” [152.4] (W) x 5.5” [139.7] (D) Certifications: FCC Class B, EN60950

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Raleigh, NC 27615
1-800-638-3748
www.sensus.com/water

Trimble Nomad 1050 Series

Key Features

Ultra-rugged handhelds built to work in challenging environments

Long battery life extends time in the field

Enhanced computing power and 8 GB memory for fast processing of field data

Field to office connectivity with wireless data communications

Simplified and fast asset tracking using optional 1D/2D integrated barcode scanner

Compatible with Trimble GIS software for complete field to office workflows

ARM YOURSELF WITH A HANDHELD BUILT FOR EXTREMES

The Trimble® Nomad® 1050 series is a family of proven, ultra-rugged, feature-packed GPS handhelds created for mobile GIS professionals carrying out field data collection and inspection activities in harsh environments. Engineered to provide you with a high-performance PDA-style data collector that targets outdoor use in extreme conditions and challenging locations, the Nomad 1050 handheld makes it easy to collect, maintain, save and transmit data in the field. If you work in remote forests, isolated wetland areas, desert regions or urban streets, you need the Nomad 1050, a handheld that works as hard as you do all day long, no matter where you go.

Powerful, Rugged, Productive

Driven by a powerful 1.0 GHz processor and running Microsoft® Windows® Embedded Handheld version 6.5 operating system, the Nomad 1050 delivers all the features mobile workers need. Keep working productively all day with the Nomad's long battery life offering more than 15 hours of continuous use, even in cold conditions, and 8 GB of built-in storage plus 512 MB Ram.

The keyboard's tactile buttons optimize heavy data entry workflows in the field. Even when wearing gloves you will be able to input data and maintain your datasets with speed and ease. The Nomad 1050's high-resolution, sunlight-readable VGA color display also shows images, maps and data in crisp detail. Capture high-resolution images with asset, event, or site information using the built-in 5 megapixel camera with integrated flash and geo-tagging functionality—ideal for maintenance and repair applications.

Meeting the rigorous MIL-STD-810G military standards for impact, vibration, humidity, altitude and extreme temperatures, and with an IP68 rating for dust and water, the Nomad 1050 is a fully rugged device made to last.

Increased Productivity

An advanced integrated GPS antenna design tracks the full constellation of satellite signals, resulting in improved coverage, performance and greater location accuracy worldwide. Capable of real-time 2 to 4 meter positional accuracy and able to achieve positions in less time in challenging environments, such as in canyons or under heavy forest canopy, the Nomad 1050 ensures you're collecting reliable data. Plus, for high accuracy applications, you can pair the Nomad with the Trimble R1 GNSS receiver using Trimble ViewPoint RTX™ correction service to achieve submeter location accuracy anywhere in real-time.

Adaptable to Changing Workflows

The Nomad 1050 provides flexibility for diverse field applications with a range of models that offer integrated options and configurable accessories. The handheld provides a choice of integrated wireless capabilities, from Bluetooth® and Wi-Fi to optional 3.75G dual-band GSM/CDMA connectivity, to keep you connected to the office from the field. In addition, there is an optional integrated 1D/2D laser barcode scanner with built-in capability to recognize and sort dozens of barcodes at once—perfect for busy warehouses, transportation of products or complex asset tracking.

For a complete field-to-office workflow solution, utilize the Nomad 1050 handheld with Trimble Mapping & GIS field and office software to process and manage your data and create high quality deliverables for your organization.

Built to endure the toughest conditions GIS professionals may encounter, the hardworking, reliable Trimble Nomad 1050 series handhelds keep you working productively in almost any weather condition and location.

Trimble.

Trimble Nomad 1050 Series

STANDARD FEATURES

- Microsoft Windows Embedded Handheld (WEHH) 6.5 Professional, available in English, Spanish, French, German, Italian, Japanese, Korean, Portuguese (Brazilian), Russian, or Chinese (Simplified)
- Processor: 1 GHz, Texas Instruments DM3730
- 512 MB DDR SDRAM, 8 GB non-volatile Flash storage
- Full VGA sunlight-readable color TFT display, resistive touchscreen
- Rugged submersible design (prolonged immersion in water at 1 meter depth)
- Integrated digital camera (color, 5 megapixel resolution, with flash)
- Integrated speaker and microphone
- IP68 and MIL-STD-810G
- Bluetooth® 2.0 + EDR
- Secure digital or micro SD/SDHC slot
- Notification LEDs
- USB host and client
- Headset jack (2.5 mm mono audio and microphone)
- 15-hour battery life (in active use with default settings)
- Keypad backlight for night use

STANDARD SOFTWARE

- Microsoft Office Mobile
- Notes/Tasks
- Calculator
- Windows Media Player
- Microsoft Picture & Videos
- Online help
- Pocket OneNote
- Contacts/Calendar
- Adobe Reader LE

STANDARD ACCESSORIES

- Rechargeable Li-ion battery module
- User guide
- Rugged stylus with spring-loaded tip
- Hand strap
- Stylus lanyard
- Screen protectors
- AC charger and international adapters
- USB data cable
- USB or Serial boot
- Standard cap

OPTIONAL ACCESSORIES*

- UHF RFID accessory reader
- Office docking station
- Carry case
- Deluxe case with belt clip & neck strap
- Range pole bracket
- 12 V vehicle charger
- Serial interface cable
- Vehicle mount
- AA battery module
- Spare battery charger

Compatible with all Nomad 1050 models

CONFIGURATION OPTIONS

- Integrated Dual-Mode 3.75G GSM/CDMA capability
- Integrated GPS (SiRFstar IV, SBAS (WAAS, EGNOS))
- Wi-Fi wireless capability
- 1D/2D integrated laser barcode imager using Trimble Scan Agent application
- Serial boot option with 9-pin RS-232 port
- Docking boot option compatible with Nomad office docking station
- USB boot option

NOMAD CONFIGURATIONS	Camera	Barcode Imager	WWAN
1050 LC	•		
1050 LE	•	•	
1050 XE	•	•	•

SOFTWARE COMPATIBILITY

Please refer to the Product Compatibility list (www.trimble.com/mappingGIS/productcompatibility)

PHYSICAL

Size . . . . . 17.6 cm x 10 cm x 5.0 cm
Weight . . . . . 596 g including rechargeable battery

EVIRONMENTAL SPECIFICATIONS

Meets or exceeds:
Water . . . . . Survives IP-X8, immersion at 2m (6.6 ft) for 1 hour IEC-60529, survives IP-X6, water jet 12.5mm dia @ 2.5-3m
Dust . . . . . Protected against dust, IEC-60529 IP-6X, dust chamber with under-pressure
Drops . . . . . Survived multiple drops of 1.2 m, MIL-STD-810G, Method 516.6, Procedure IV, Transit Drop
Operating Temperature . . . . . –30 °C to 60 °C MIL-STD-810G, Method 502.5, Procedure I, II, III (Low Temp Operating -30 °C); Method 501.5, Procedure I & II (High Temp Operating 60 °C)
Storage Temperature . . . . . –40 °C to 70 °C MIL-STD-810G, Method 502.5, Procedure I, II, III (Low Temp Storage –40 °C); Method 501.5, Procedure I & II (High Temp Storage 70 °C)
Temperature Shock. . . . . Cycles between –30 °C and 60 °C MIL-STD-810G, Method 503.5, Procedure I-C
Humidity . . . . . .90% relative humidity with temperatures between –30 °C and 60 °C MIL-STD- 810G, Method 507.5, Procedure II
Altitude . . . . . 4,572 m at 23 °C to 12,192 m at –30 °C MIL-STD-810G, Method 500.5, Procedure I, II & III
Vibration . . . . . General minimum integrity and loose cargo tests, MIL-STD-810G, Method 514.6, Procedure I & II, Category 5
Solar Exposure . . . . . Survives prolonged UVB exposure, MIL-STD- 810G, Method 505.5, Procedure II
Chemical Exposure. . . . . .Resistant to mild alkaline and acid cleaning solutions, fuel hydrocarbons, alcohols and common vehicle and factory machine lubricants

ELECTRICAL

Processor . . . . . 1.0 GHz, Texas Instruments DM3730
Memory . . . . . 512 MB DDR SDRAM; ~10 MB reserved
Storage. . . . . 8 GB onboard non-volatile NAND Flash; ~50 MB reserved
Expansion. . . . . 1x microSD/SDHC
Display . . . . . 3.5", 480 x 640 pixel (VGA) 16-bit color TFT with LED backlight
Batteries . . . . . 5200 mAh Li-ion rechargeable module[1]
I/O . . . . . USB host and client, power, headset jack

GPS accuracy . . . . . 2–4 m SBAS corrected[2]
Radios . . . . . Bluetooth 2.0 + EDR, WLAN: Wi-Fi (802.11b/g); WWAN: Dual Mode 3.75G GSM/CDMA

CERTIFICATIONS:

FCC, CE, R&TTE, IC (Canada), A-tick, C-tick, GCF compliant, RoHS compliant, Section 508 compliant, PTCRB, SAR, AT&T network certified, Verizon, Wi-Fi Alliance certified, MIL-STD-810G, IP68

1 Battery life affected by power settings, usage patterns and environmental conditions. To ensure best performance when temperatures are below –20 °C (–4 °F), be sure battery is inserted in the device only when in use. When device is not in use at these temperatures, keep batteries in a pocket or stored in a warmer area.
2 2–4 m (50%–95%) accuracy determined using Horizontal Root Mean Squared method – Open Sky.

Specifications subject to change without notice.

TRIMBLE AUTHORIZED DISTRIBUTION PARTNER

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Trimble Navigation Limited
10368 Westmoor Dr
Westminster CO 80021
USA

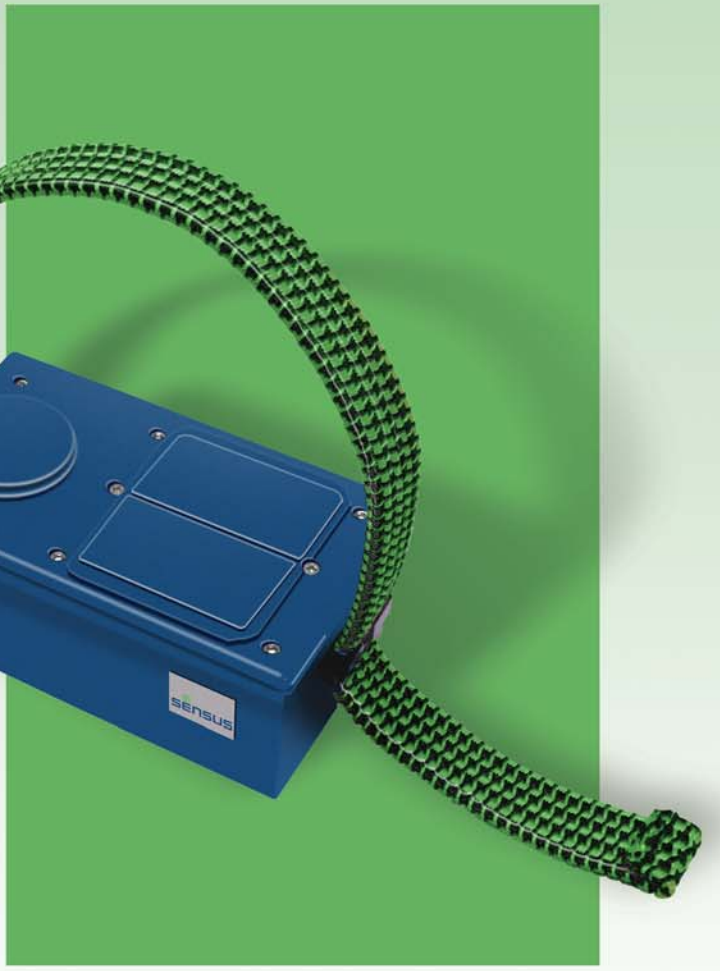
EUROPE
Trimble Germany GmbH
Am Prime Parc 11
65479 Raunheim
GERMANY

ASIA-PACIFIC
Trimble Navigation
Singapore Pty Limited
80 Marine Parade Road
#22-06, Parkway Parade
Singapore 449269
SINGAPORE

FLEXNET CommandLink

You're in command.

The FlexNet® CommandLink is a wireless interface that allows utility personnel to access a complete suite of functional controls within a gas, water or electric SmartPoint. The Bluetooth-enabled CommandLink directs the SmartPoint's activation, programming, and diagnostic settings as well as performing on-demand interrogation of the device. CommandLink is capable of communicating with any Hand-Held Device (HHD) enabled with Bluetooth technology, Windows Mobile 6 GPS and 50 MB of available memory as well as laptop computers with Windows XP or Windows Vista, Bluetooth technology and GPS. What's more, this versatile device features rechargeable, field replaceable batteries giving technicians the power to program up to 250 SmartPoints over a two-day period on a single charge. CommandLink System Software includes a simple programmer for ad hoc programming and a route programmer for more structured programming.



Programming:

It couldn't be simpler. Following the physical installation of the SmartPoint, position the CommandLink on the SmartPoint (use the included strap to hold CommandLink in place, if necessary). CommandLink will automatically connect to the HHD or Laptop Computer via Bluetooth wireless technology, allowing personnel to communicate with the SmartPoint and begin the programming process. If programming adjustments are necessary, just follow the simple programming instructions displayed on the HHD or Laptop Computer screen.

Troubleshooting-one-call resolution

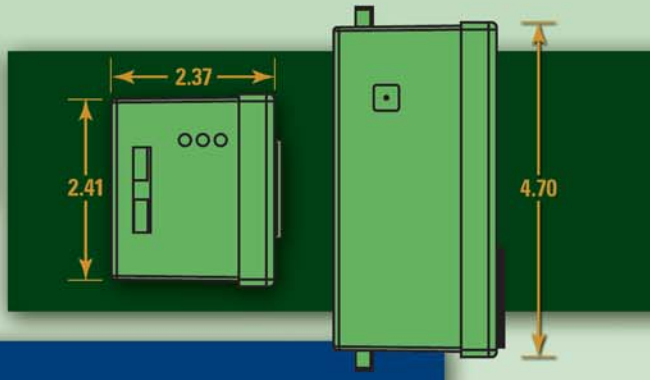
CommandLink provides instant access to the SmartPoint's programmed and stored information. With just a few keystrokes, the operator can pull setup information, validate readings, and verify or reprogram settings for optimal performance. You get immediate results. When finished, the CommandLink will initiate communication between the SmartPoint and TGB. Transmit reading, setup, binding or alarm information directly to the database, providing instant confirmation of any changes.

CommandLink

CommandLink Specifications

Primary Function

Electronic tool permitting on-site wireless installation, interrogation and programming of FlexNet water and gas SmartPoints.



Physical

Length	Width	Height	Weight
4.7"	2.41"	2.37"	16 oz.

Exterior: high-impact, injection-molded plastic
Strap: elasticized "bungee" material
Accessories: AC/DC charger (included)

Environmental

	MIL-STD 810F			Method
Temperature – shock	-20° – 103° F			503.4
Temperature – storage	-31° – 140° F			501.4
Temperature – operation	-20° – 130° F			501.4
Humidity	90% rel. -29/+54			507.4
Water	Procedure I			512.4
Drop	No.	Ht.	surface	temp.
	6	5 ft.	concrete	-20° F
	5	5 ft.	concrete	70° F
	6	5 ft.	concrete	130° F
				516.5
Sand/Dust	Procedures I, II; IEC-529-IP-X6			510.3

Electrical

Batteries:	Three (3) "AA" rechargeable or Energizer brand disposable NH-15AA
Replaceable:	Yes
AC Charger:	Yes
DC Charger	Yes
Charge Time:	Approximately 4 hours
Indicators:	LED; power, Bluetooth communication, charging
Firmware:	Upgradable via Bluetooth interface

RF Communication

CommandLink complies with FCC Part 15, FCC Part 15 Class B and Canadian ICES-003 requirements.

Bluetooth:	Class 2
Sensus:	Inductive at SmartPoint, TouchRead capable

Hand-Held Compatibility

	Windows Mobile6®	USB Interface	Bluetooth®
Sensus AR5500[1]	X	X	X
Trimble Nomad[1]	X	X	X
Juniper Archer[1]	X	X	X

[1]HHDs listed at left are capable of completing 250 installations over a two day period on a single charge. Other HHDs that meet the Hand-Held Compatibility requirements must have 50 MB of internal memory to operate CommandLink software; however, battery life may not meet the Sensus standard of 250 intallations.

SENSUS

SS-A-TGB-4000-0415-01-A

Sensus Base Station

M400B

Compact Point-to-Multipoint Network Base Station

The Sensus FlexNet™ M400B Base Station offers a strategic communications option for public service providers with endpoints deployed in remote or densely populated areas. These compact, efficient transceivers fit in space-constrained environments, enabling communication of status and usage information with fewer access points than other network architectures.

Benefits

- **Licensed radio spectrum** In the North America, FCC/IC protected primary-use spectrum avoids competition with other wireless services, interference from other radio devices, and the risk of being taken over by emergency service providers
- **Fewer access points** Our point-to-multipoint architecture directly connects base stations to endpoints over large geographic areas – greatly reducing the number of network backhaul connections as well as O&M costs
- **Resilient network design** Sensus Base Stations continue to provide real time data during outages and emergencies because they don't rely on power from the infrastructure they're monitoring – that enables better workforce management and faster service restoration
- **Small footprint** Flexible pole or wall-mounting options enable strategic deployment options with a discreet appearance
- **Cybersecurity** Sensus has achieved GE/Wurldtech™ Achilles® communications certification for critical infrastructure security against cyber threats

Sensus Base Station
M400B

Standard M400B Base Station Properties

Model M400B	
Receive Bandwidth	200 KHz
Transceivers	One
Spectrum	Licensed 900 MHz PCS/MAS
Duplexing	Single Transmit Eight Receive Channels: simultaneous/dedicated
Applications	Single
Expandability	No
Compatibility	SNMP

Enclosures	Outdoor - Pole/Wall Mount
Height	22” (55.9 cm)
Width x Depth	22” (55.9 cm) x 10.5” (26.7 cm)
Capacity	1 transceiver
Temperature	-40° to +122° F (-40° to +50° C)
Voltage	120 VAC
Battery Backup	8 hours
NEMA Rating	4
Air Conditioned	No

Applications

- Two-way Advanced Meter Infrastructure (AMI)
- Distribution Automation (DA)
- Demand Response (DR)
- Home Automation Networks (HAN)
- Sensus VantagePoint™ Lighting Control

Components

- GPS receiver for time synchronization
- Duplexer for single antenna
- IP-addressable power supply with hot-swap capability
- 8-hour battery backup
- Alarms and reporting capability
- Backhaul via Ethernet/IP
- Heated battery for cold weather environments
- Modular construction for easy serviceability

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FlexNet™ Regional Network Interface

System Management

Description

The Regional Network Interface (RNI) receives data that is forwarded from Sensus Base Station collectors. Data is received and stored in the RNI utilizing four main systems: the Information Management System; the Network Management System; System Health Diagnostics; and the Business Management System. The RNI data systems are available to the utility customer and to Sensus for monitoring.

Features

The RNI provides enough dial-up modem capacity for all of the Base Stations in one local RF Network. The Data Concentrator (DC), located within the RNI, is responsible for elimination of duplicate EMD messages received simultaneously by multiple Base Stations. Sensus employs primary and back-up communications from the Base Stations to the RNI. Filtered data from the DC is sent to the Information Systems Platform, which formats the data for the Database Management System. The RNI provides billing and account management, network management functions, data warehousing and hand-off functions to the utility customer.

The Information Management System (IMS) software accepts filtered data from the local RNI. The main purpose of this software layer is to provide a logical endpoint for the data streams coming in from the Base Stations. IMS software performs the following functions:

- Data translation and conversion to customer format
- Data hand-off to Customer
- Manual data entry

Proprietary system health software is utilized by Sensus Systems Engineers to pro-actively identify and cure potential system problems. Certain failure modes are reported directly to the 24x7 maintenance monitoring Central Station. The diagnostics software allows Sensus personnel to verify proper operation of a network deployment and to quickly identify potential problems with Base Stations or meter SmartPoint™ devices. Rapid identification of problems is critical for rapid resolutions. This is a part of the ongoing service that Sensus provides to a utility. The Sensus FlexNet™ system uses exclusively licensed radio frequencies that are strongly protected. Detection of interfering sources and other interferers is part of the daily system check and can be reported to authorities together with the jamming signal's approximate location as determined by tower signal levels. The very strict FCC rules that govern type acceptance of devices using licensed frequencies adjacent to the ones used by Sensus FlexNet ensure clean narrow band sources that do not affect the noise floor of the Sensus FlexNet channels.

The Business Management System consists of Billing, Reporting and SmartPoint Management (i.e., meter additions/deletions). There is also an important functional relationship between the Business Management System and the other two management systems, since the significance of each EMD message is ultimately defined within the Business Management System. The Information Management System makes message routing and storage decisions based on individual customer requirements.

The meter data stream is terminated at the RNI, where it is received via a secure, encrypted tunnel from the Base Station. The actual meter readings are decrypted at this point using the WEP keys, and inserted into the utility customer-controlled meter-read database.

Specifications

Server	Data Concentrator	Utility Information Platform
Model	Dell PowerEdge	Dell PowerEdge
Dimensions	1U: Rack Mount**	2U: Rack Mount***
Weight	31 Lbs.**	51 Lbs.***
Storage	Dual 80GB Hard Drive**	Six 73GB Hard Drive***
Operating System	Red Hat Enterprise Linux5	Microsoft SQL Server
Maintenance Hardware	Dell	Dell
Software	Sensus*	Sensus*
Power Requirements	90-240 VAC	90-240 VAC
Operating Temperature	+50° to +90° F	+50° to +90° F

* RNI Requires two servers
** Water- and Gas-Only applications (up to 50,000 accounts)
*** Combination utility applications (up to 50,000 accounts)

Operations

Data Concentrator System Health, Diagnostics and Administration	Utility Information Platform
Base Station Exception Reporting • Power Fail • Phone Fail • Loss of RF Communication • Self Diagnostics Report • Pager Alerts	Data Formatting • Match Existing Formats
SmartPoint Reporting • SNR Throughput • ANR Time Plots • Map Positions • Maintenance Log	Alarm Reporting
SmartPoint Discovery • New SmartPoint Notification	Sorted Exception Log • Commands to SmartPoints
Billing to Utility • On Qualifying SmartPoints	Commands to SmartPoints • Remote Disconnect/Reconnect • Load Shed Restore • C&I Table Sessions • Programmable Features

For more information, visit us at sensus.com

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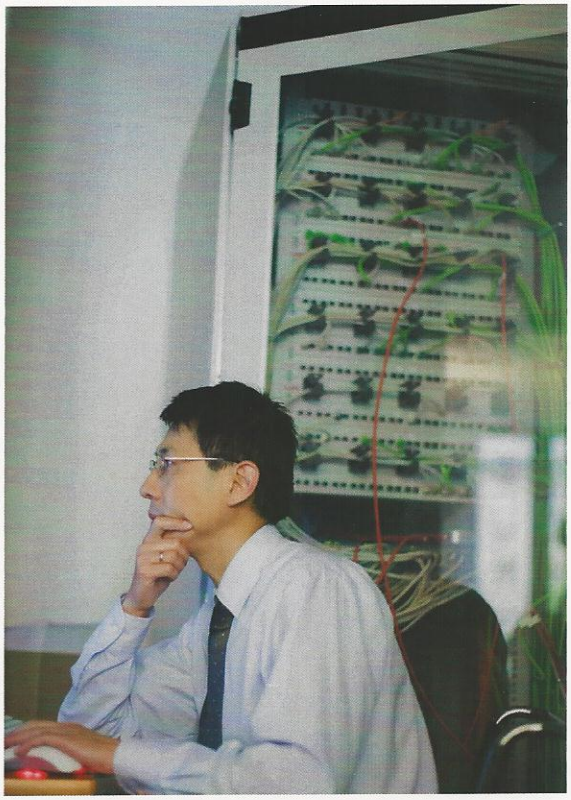
Unified Network Management Solutions

Sensus can optimize and support a utility's investment by providing:

- 24x7 network operations center (NOC) surveillance and support services such as:
  - Trouble ticket generation
  - Advanced security monitoring
  - Preventative maintenance and monitoring
  - Detailed reporting of outages, exceptions, reads and alarms
- Technical support, management and escalation processes to minimize service interruptions
- Data retention and disaster recovery using fault tolerant data centers
- Head end hardware and software, including software maintenance and upgrades
- Remote firmware maintenance
- Secure customer login access
- Continuous network optimization & system tuning
- Centralized and uniform operational processes
- Compliance with National Institute of Standards and Technology (NIST) security standards



Additional System Support Elements

To provide the most comprehensive solution to Sensus customers, Sensus includes additional elements in its hosting solution:

- FCC spectrum license and license maintenance for USA customers
- Replacement parts for FlexNet™ Base Stations

Freedom, Stability, Cost Effectiveness and Customer Control

Sensus currently hosts over 300 utilities, and our expertise enables our customers to focus on their core operations. Sensus' network management expertise and resources deliver world class system uptime, maintenance and support.

From small municipalities to large investor owned utilities, a partnership with Sensus will deliver superior solutions and provide the service and support needed for your deployment. For more information, please contact your local Sensus representative or visit us at www.sensus.com today.

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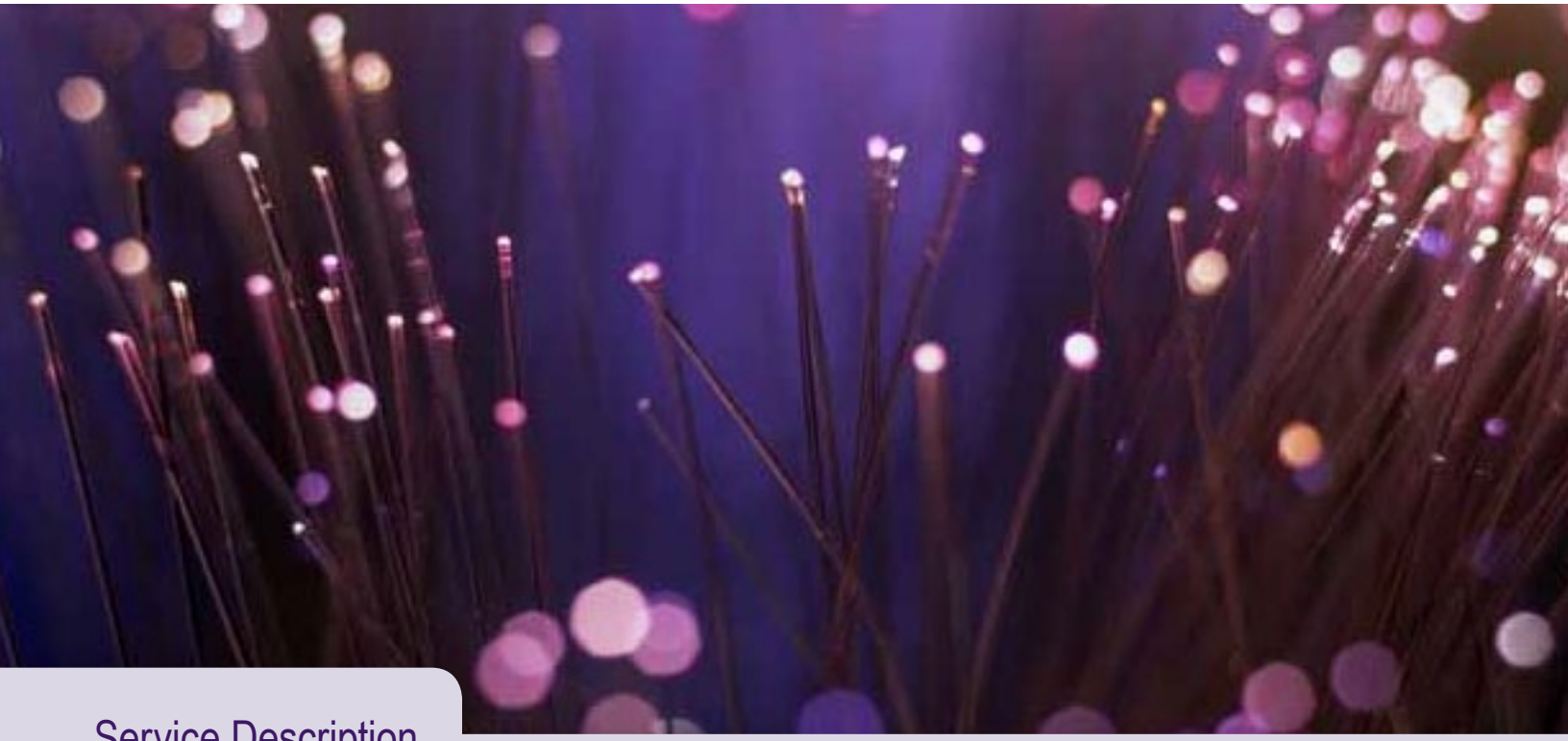
Software as a Service



Service Description

WHAT IS SOFTWARE AS A SERVICE?

Software as a Service (SaaS) is a software application you can securely access by using any Internet-enabled device without having to install it locally or on a server. It offers multiple benefits across many industries for personal and business use. An example of this would be Google's Gmail service. If you have a Gmail account, all you have to do is pull it up in any browser to manage your email. There's no software you have to install on your computer. And, when Google makes enhancements to the Gmail service, they're made available to you instantly without you having to do anything at all. It's a seamless process. It happens this way because Google is managing all of the software and hardware requirements—including the security of your data. This is Software as a Service. It enables you to focus on what matters most to you: using the application. The Sensus SaaS solution was created with your needs in mind. It is easy to use, reliable, and the responsibility for maintaining it falls on Sensus—not you.

SAAS VS. LICENSE SOFTWARE

Sensus understands that the ability to manage vital utility applications is key to maintaining operational efficiency and providing first rate customer support. Sensus offers a choice when it comes to managing the software and hardware required to run your AMI system. With SaaS, you can rest assured that the services being conducted behind the scenes such as hardware or operating systems software maintenance, and ensuring your AMI software is always on the latest version, will be handled by the experts at Sensus. This way you can focus on your business. Of course, if your utility has the expertise on staff, Sensus also provides licensed software that allows your IT staff to maintain the AMI Software. The licensed software model allows you to install software updates or security patches on your own schedule. With licensed software, we provide the tools you need to manage and maintain your network software. Whichever software model you choose, our commitment to providing exceptional customer service is unwavering.

SENSUS

Software as a Service

Benefits

Software as a Service (SaaS) is a proven concept in every regard—from ease of use to safety of data.

- SaaS isn't a new concept. It's been around for decades and is currently being used for a variety of applications in many industries.
- Sensus currently has over 400 SaaS customers. Over 100 of them are utilizing SaaS for AMI applications.

When utilities subscribe to Sensus Software as a Service (SaaS), they are getting more than just the software. They're securing the confidence and peace of mind that comes with enhanced ongoing support.

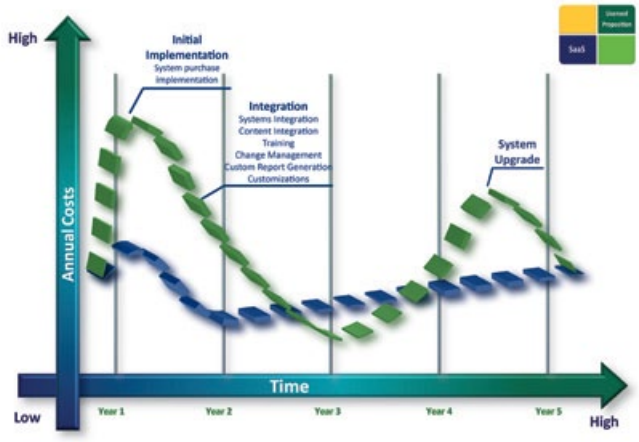
- Sensus SaaS includes delivery, software support and ongoing maintenance.
- Backup and disaster recovery service is included in the subscription price so utilities always know their data is available.
- Each utility has its own separate firewalled network.
- 99% uptime is guaranteed.
- Two Tier IV SSAE 16 certified data centers provide continuous replication of data to prevent data loss.
- Sensus provides monthly vulnerability scanning, anti-virus management and disaster recovery/data backup.

Included Services	Licensed Model	SaaS Model
Telephone Support	✓	✓
Remote Diagnostics of Software Problems	✓	✓
Software Updates	✓	✓
AutoRead annual support (if applicable)	✓	✓
Loaner Programming Equipment	✓	✓
Discounted Remote or On-site Training	✓	✓
Daily Backup		✓
Data replication to a Disaster Recovery site		✓
Anti-Virus and Malware subscription and scanning		✓
Operating System support, troubleshooting, security patching and upgrades		✓
Linux Red Hat, Microsoft Windows Server, Microsoft SQL Server and Oracle licenses and ongoing maintenance		✓
Hardware Maintenance or Refresh		✓
Data secured in a Tier IV SSAE 16 Certified Data Center		✓

*Requires customer to provide secure Cisco or OpenVPN connection

Sensus SaaS solutions are subscription-priced products that offer upfront cost benefits as well as lower total cost of ownership for utilities.

- **Overall cost savings:**
  - SaaS provides utilities of all sizes an affordable, efficient and effective alternative to building their own data management solution.
  - Sensus manages all updates and upgrades at no extra cost.
  - No additional software or hardware will need to be purchased by utilities upfront or as their customer base grows—this eliminates the need to dispose of depreciated hardware.
- **Predictable IT expenses:**
  - SaaS provides predictable IT expenditures and fewer over-budget IT project surprises. Internal IT support is freed up to focus on core competencies.
  - The support Sensus provides with its SaaS solutions can reduce or eliminate the need for any additional IT expenses.



- **Shorter deployment time and global availability:**
  - SaaS implementations are typically performed in 45% to 55% of the time and cost of on-premise licensed services.
  - Access to SaaS is available anywhere on Internet natively. There is no need to VPN into a network to obtain access to a licensed on premise application.

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Analytics Core Software Specifications

METER DATA MANAGER

1.1 Core Capabilities

1.1.1 The AMI software shall comply with prevailing industry standard hardware, operating systems, databases, and user interfaces.

1.1.2 The AMI software must exist as a browser-based (Internet Explorer 11 or later, Chrome, or Firefox) application that operates on a hosted server.

1.1.3 The AMI software should provide a customizable file layout structure to interface with the utility's CIS for integrating meter reading data and customer information.

1.1.4 The AMI software must support single and dual register meter information.

1.1.5 The AMI software should be capable of pulling data less than an hour old.

1.1.6 The AMI software must be scalable to meet the full deployment requirements in a hosted environment without system and performance impacts to the utility.

1.1.7 The AMI software shall be scalable and not require any additional licenses based on number of endpoints.

1.1.8 The AMI software provider must be able to describe the methods that support scalability and associated costs.

1.1.9 The AMI software must retain all meter reading data for a minimum of 36 months and provide provisions for additional storage if required.

1.1.10 The solution should be available as Software as a Service (SaaS) where the provider manages all hardware and software for the Utility. SaaS should be all inclusive for annual maintenance, licenses, upgrades and support.

1.1.11 The AMI solution should provide graphical views to accounts if location data is provided from the Customer Information System and/or headend system.

1.1.12 The AMI solution shall support the import of data from a Walk-By/Drive-By system to assist in a roll out program and be compatible with existing Sensus Systems [**Reference current Sensus technology**] and Sensus-approved competitive systems [**Reference Compatibility Document for approved devices**].

1.1.13 The AMI software shall allow data from multiple reading technologies (AMR and AMI). The Meter Data Manager (MDM) shall act as a middleware between Customer

Information Systems (CIS) and the Sensus FlexNet Regional Network Interface (RNI).

1.1.14 The system should offer dashboard to report on the following water-based anomalies:

- Reverse Flow
- Leak Detected
- Tamper

1.1.15 AMI software shall have a graphical user interface (GUI).

1.1.16 AMI software shall have icon-driven accessibility for ease of navigation and addition of other applications.

1.1.17 AMI software shall have built-in training videos for quick reference and self-guided training.

1.1.18 The AMI software shall have the following administration and system configuration: Role-based privilege management (Access Control)

1.1.19 The AMI software shall be include the following groups:

- Filter by: AMI ID
- Filter by: Billing Cycle
- Filter by: Commodity Type

1.2 Import / Export capabilities

1.2.1 The AMI software must be able to export data to Microsoft Excel, PDF, Common Separated Value (CSV), and Text files.

1.2.2 The AMI software must interface to the utility's CIS/billing software. The AMI software must have a setup application to map simple interfaces from a CIS/Billing System.

1.2.3 The AMI software must import and support GPS type data to identify and display locations of accounts geographically.

1.2.4 AMI software must provide a billing export.

1.2.5 AMI software must have a billing export setup application.

1.2.6 AMI software must have a customer information data import setup application.

1.2.7 AMI software must have a billing import file setup application (billing request file method).

1.2.8 The billing gateway should allow entry of valid start and stop times for billing purposes.

1.2.9 The AMI software shall have export capabilities of greater than 5K rows.

1.3 Meter Data

1.3.1 Data Management

1.3.1.1 The AMI software shall provide the ability to process hourly time-stamped meter reading taken from all meters and verify the percentage of reads received for particular areas and/or selected meter routes. This data must then be exposed to various configurable parameters set (when provided), such as high/low parameters to assure the accuracy of the data.

1.3.1.2 The AMI software must be able to search for records matching specified information.

1.3.1.3 The AMI software must provide the following data to the utility on a daily basis for monthly billing applications:

1.3.1.3.1 Hourly time-stamped meter reading taken from all AMI meters for monthly billing purposes.

1.3.1.3.2 Hourly usage/consumption readings for resolution of customer billing disputes and improved customer service.

1.3.1.3.3 Alarm data received from AMI devices for identification of customer site problems.

1.3.1.4 The AMI software must be able to support demand read capability to the meter.

1.3.1.5 The AMI software must provide the capability to store all meter data information for a minimum of three (3) years.

1.3.1.6 The AMI software must utilize the head-end system's ability to back-fill missed reads to eliminate the need for validation routines.

1.3.1.7 The AMI software shall have the following GIS, CIS, and SCADA business interface services:

- Customer Information System (CIS) integration
- CIS daily synchronization
- CIS daily synchronization file mapping integration without coding
- CIS billing export
- CIS billing export file mapping without coding
- CIS on demand reads
- Supervisory Control and Data Acquisition (SCADA) integration via professional services

1.3.2 Data Analytics

1.3.2.1 The AMI software must perform a high low analysis report. The AMI software must be able to check the reported value for the reading is within a percentage

threshold of the historic average for the meter, taking into account seasonal variance (or a set value provided from the Customer Information System).

1.3.2.2 The AMI software must allow a standard customizable report on continuous usage, needed for use in leak detection.

1.3.2.3 The AMI solution should be able to identify and report revenue protection incidents.

1.3.3 Data Reporting

1.3.3.1 AMI software should translate data for use with reports.

1.3.3.2 AMI software should have ability to search meter data.

1.3.3.3 The AMI software must provide Alert capabilities to include the following:

- Power Failure
- Power Restore
- Tamper Report
- Brown Out
- Meter Read Failure
- High Temperature
- RAM Failure
- ROM Failure
- Calibration Error
- Register Checksum Error
- Reset Error
- Meter RAM Error
- General CRC Error
- Soft EEPROM Error
- Watch Dog Restart
- Bit checksum Error
- Soft kWh Error
- Low AC Volts
- Current Too High
- Meter Power Fail
- Hard EEPROM Error
- Hard kWh Error
- Configuration Error Latched
- Reverse Power
- Low Loss Potential
- Low Battery Error
- Meter ROM Error
- Meter Unprogrammed
- Clock Error
- High AC Volts
- Metro Calibration Corrupt
- Power Failure 7759

- Metro Bad Register Number
- Block No Good Blocks
- Block Buffer Size Error
- Block Bad Index
- Block Can’t Mark Bad
- Disconnect Fail
- Reverse Energy Alarm
- History Over Flow Report
- Cut Wire
- Leak Detected
- Meter Communication Failed
- Non Numeric Read
- Magnetic Tamper
- Tilt Tamper
- Time Adjustment
- Blink
- Hot Socket
- Corrector Error
- Low Pressure
- High Pressure Shutoff
- Excess Flow
- Seismic Event
- Low Pressure Warning Monthly
- High Pressure Warning Monthly
- Unknown Valve State
- Swapped Meter
- Meter Communication Failed 30 days Latched
- High Voltage Latched
- Over Class Amps Alarm
- Over Temperature Event
- Battery Door Tamper Latched
- Dead Battery
- RSV Low Battery
- Upgrade Mode
- Idle Latched
- Meter Low Battery
- Critical Hardware Warning
- Alarm Overflow Latched
- Single Phase Fail
- Configuration Error Current
- EMF Range Latched
- Glide Slope Latched
- Low Battery Volts
- Low Field
- TouchRead Failure Latched
- Billing Cycle Overflow
- Daily Usage Overflow
- Vacation Overflow

1.3.3.4 The AMI software must provide the following reports:

- All Alarms
- Billing Request Mismatch
- Consumption Exception (24 Hours)
- Consumption
- Consumption vs Previous Read
- Endpoint Details
- High Low Exception Report
- Master Route Interval Reads
- Master Route No Readings
- Master Route Register Reads
- Mismatch Report
- Negative Consumption
- Orphaned Meters
- UoM Comparison
- Zero Consumption for Period

1.3.3.5 The AMI software must have the ability to alert appropriate personnel of certain triggered alarms.

1.3.3.6 AMI software must have email notification of alerts.

1.3.3.7 AMI software must have text message notification of alerts.

1.3.3.8 The AMI software must provide a geo-spatial/map view that includes:

- Display of meters
- View assets with events on map.

1.4 Device Access

1.4.1 From one application and without having to search on the account a second time, the Customer Service Representative (CSR) should be able to see all account information, interval and register reads for a selectable amount of time, and see any alarms that have been reported for the account.

1.4.2 This information should be exportable to the windows clipboard, pdf file, CSV file or Excel.

1.5 Software Provider

1.5.1 AMI software shall be Sensus Analytics Enhanced Version Software or approved equal as determined by the utility.

Appendix S - Advanced Metering Infrastructure (AMI) Agreement

A Vender has not been selected and these are for Reference only

between

City of Roswell, NM
("Customer")

and
Sensus USA Inc.
("Sensus")

IN WITNESS WHEREOF, the parties have caused this AMI Agreement ("Agreement") to be executed by their duly authorized representatives as of the day and year written below. The date of the last party to sign is the "Effective Date."

This Agreement shall commence on the Effective Date and continue for/until: 5 Years ("Initial Term"). At the end of the Initial Term, this Agreement shall automatically renew for an additional term of 5 years ("Renewal Term"). The "Term" shall refer to both the Initial Term and the Renewal Term.

This Agreement contains two parts: Part (1) is The FCC Notification for Spectrum Manager Lease, to be filed with the FCC by Sensus on behalf of the Customer and Part (2) is a AMI Agreement between Sensus and Customer. Together, these two parts create the Agreement.

Sensus USA Inc.		**Customer: City of Roswell, NM**	
By:	_____	By:	_____
Name:	_____	Name:	_____
Title:	_____	Title:	_____
Date:	_____	Date:	_____

Contents of this Agreement:

Part 1: Notification for Spectrum Manager Lease

In order for Sensus to apply to the FCC on the Customer's behalf for a spectrum manager lease, Customer must complete the information below in boxes one (1) through ten (10) and certify via authorized signature. Customer's signature will indicate that Customer authorizes Sensus to file the spectrum manager lease notification on FCC Form 608 with the Customer as spectrum Lessee, and if Customer does not already have one, ownership disclosure information on FCC Form 602.

1.

Customer/Lessee Name:		
Attention To:	Name of Real Party in Interest:	
Street Address:		City:
State:	Zip:	Phone:
Fax:	Email:	

Is Customer contact information same as above? ☐Yes ☐No (If No, complete box 2 below)

2.

Additional Customer/Lessee Contact Information

Company Name:		
Attention To:		
Street Address:		City:
State:	Zip:	Phone:
Fax:	Email:	

3.

Customer/Lessee is a(n) (Select one): ☐Individual I ☐ Unincorporated Association I ☐Trust
☐Government Entity I ☐Corporation I ☐ Limited Liability Company I ☐General Partnership
☐Limited Partnership I ☐Limited Liability Partnership I ☐Consortium I ☐ Other _____

4.

FCC Form 602: FCC File Number of Customer's Form 602 Ownership Information: _____. If Customer has not filed a Form 602, Sensus will file one for Customer. Please complete questions 5, 6, and 7 below if Customer does not have a Form 602 on file.
Customer must complete items 8, 9 and 10 irrespective of whether Customer has an ownership report on file.

5.

Customer Tax ID:

6.

Individual Contact For FCC Matters

Please designate one individual (the Director of Public Works or similar person) who is responsible to the FCC for the operation of the FlexNet radio system.	
Name	
Title:	
Email:	Phone:

7.

Ownership Disclosure Information

If Customer/Lessee is a government entity, list the names of the Mayor and all Council Members below, as well as verify citizenship and ownership interests in any entity regulated by the FCC. Such ownership must be disclosed where a mayor/council member owns 10% or more, directly or indirectly, or has operating control of any entity subject to FCC regulation. If any answer to Ownership question is Yes, or any answer to Citizenship question is No, provide an attachment with further explanation.

	US Citizen?	Ownership Disclosure?
Mayor:	☐Yes ☐No	☐Yes ☐No
Council Member:	☐Yes ☐No	☐Yes ☐No
Council Member:	☐Yes ☐No	☐Yes ☐No
Council Member:	☐Yes ☐No	☐Yes ☐No

Council Member:	☐Yes ☐No	☐Yes ☐No
Council Member:	☐Yes ☐No	☐Yes ☐No
Council Member:	☐Yes ☐No	☐Yes ☐No
Council Member:	☐Yes ☐No	☐Yes ☐No
Council Member:	☐Yes ☐No	☐Yes ☐No
Council Member:	☐Yes ☐No	☐Yes ☐No

8.

Alien Ownership Questions (if the answer is Yes, provide an attachment explaining the circumstances)

1) Is the Customer/Lessee a foreign government or the representative of any foreign government?	☐Yes ☐No

9.

Basic Qualification Information

1) Has the Customer or any party to this application had any FCC station authorization, license, or construction permit revoked or had any application for an initial, modification or renewal of FCC station authorization, license or construction permit denied by the Commission?	☐Yes ☐No
2) Has the Customer or any party to this filing, or any party directly or indirectly controlling the Customer or any party to this filing ever been convicted of a felony by any state or federal court?	☐Yes ☐No
3) Has any court finally adjudged the Customer or any party directly or indirectly controlling the Customer guilty of unlawfully monopolizing or attempting to unlawfully monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement, or any other means or unfair methods of competition?	☐Yes ☐No

10.

Customer/Lessee Certification Statements

1) The Customer/Lessee agrees that the Lease is not a sale or transfer of the license itself.	☐Yes
2) The Customer/Lessee acknowledges that it is required to comply with the Commission's Rules and Regulations and other applicable law at all times, and if the Customer/Lessee fails to so comply, the Lease may be revoked, cancelled, or terminated by either the Licensee or the Commission.	☐Yes
3) The Customer/Lessee certifies that neither it nor any other party to the Application/Notification is subject to a denial of Federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C § 862, because of a conviction for possession or distribution of a controlled substance (*See* Section 1.2002(b) of the rules, 47 CFR § 1.2002(b), for the definition of "party to the application" as used in this certification.)	☐Yes
4) The Customer/Lessee hereby accepts Commission oversight and enforcement consistent with the license and lease authorization. The Lessee acknowledges that it must cooperate fully with any investigation or inquiry conducted either by the Commission or the Licensee, allow the Commission or the Licensee to conduct on-site inspections of transmission facilities, and suspend operations at the direction of the Commission or the Licensee and to the extent that such suspension of operation would be consistent with applicable Commission policies.	☐Yes
5) The Customer/Lessee acknowledges that in the event an authorization held by a Licensee that has associated with it a spectrum leasing arrangement that is the subject of this filing is revoked, cancelled, terminated, or otherwise ceases to be in effect, the Customer/Lessee will have no continuing authority to use the leased spectrum and will be required to terminate its operations no later than the date on which the Licensee ceases to have any authority to operate under the license, unless otherwise authorized by the Commission.	☐Yes
6) The Customer/Lessee agrees the Lease shall not be assigned to any entity that is not eligible or qualified to enter into a spectrum leasing arrangement under the Commission's Rules and Regulations.	☐Yes
7)The Customer/Lessee waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by spectrum lease or otherwise.	☐Yes
8) The Customer/Lessee certifies that it is not in default on any payment for Commission licenses and that it is not delinquent on any non-tax debt owed to any federal agency.	☐Yes

The Customer/Lessee certifies that all of its statements made in this Application/Notification and in the schedules, exhibits, attachments, or documents incorporated by reference are material, are part of this Application/Notification, and are true, complete, correct, and made in good faith. The Customer/Lessee shall notify Sensus in writing in the event any information supplied on this form changes.

Type or Printed Name of Party Authorized to Sign

First Name:	MI:	Last Name:	Suffix:
Title:		Customer Name:	
Signature:			Date:
FAILURE TO SIGN THIS APPLICATION MAY RESULT IN DISMISSAL OF THE APPLICATION AND FORFEITURE OF ANY FEES PAID.			

WILLFUL FALSE STATEMENTS MADE ON THIS FORM OR ANY ATTACHMENTS ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. Code, Title 18, Section 1001) AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. Code, Title 47, Section 312(a)(1)) AND/OR FORFEITURE (U.S. Code Title 47, Section 503).

Part 2: AMI Agreement

1. Equipment.
   A. Purchase of Equipment. Customer shall purchase all Field Devices, RF Field Equipment, and other goods (collectively, "Equipment") from Sensus' authorized distributor pursuant to the terms and conditions (including any warranties on such Equipment) agreed by Customer and Sensus' authorized distributor. This Agreement shall not affect any terms and conditions, including any warranty terms, agreed by Customer and Sensus' authorized distributor. If Customer elects to purchase any equipment or services directly from Sensus, or if Customer pays any fees or other costs to Sensus, then Sensus' Terms of Sale shall apply. The "Terms of Sale" are available at: http://na.sensus.com/TC/TermsConditions.pdf, or 1-800-METER-IT.
   B. THERE ARE NO WARRANTIES IN THIS AGREEMENT, EXPRESS OR IMPLIED. SENSUS EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS, WARRANTIES AND/OR CONDITIONS, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE, REGARDING ANY MATTER IN CONNECTION WITH THIS AGREEMENT, INCLUDING WITHOUT LIMITATION, WARRANTIES AS TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, NON-INFRINGEMENT AND TITLE.
2. Services.
   A. Installation of Equipment. Installation services will be as agreed between the Customer and Sensus' authorized distributor. Sensus will not provide installation services pursuant to this Agreement.
   B. Software Implementation. Sensus shall install and configure the Software on the Server Hardware.
   C. IT Systems Integration Services. Integration of the Software into Customer's new or existing internal IT systems is not included in this Agreement. Any integration work shall be subject to a separate agreement which describes the scope and pricing for such work.
   D. Technical Support. Sensus shall provide Customer the technical support set forth in Exhibit B.
   E. Project Management. Project management of the AMI System is not included in this Agreement. Any project management shall be subject to a separate agreement which describes the scope and pricing for such work.
   F. Training. Training on the use of the AMI System is not included in this Agreement. Any training shall be subject to a separate agreement which describes the scope and pricing for such work.
3. Software.
   A. Software as a Service (SaaS). Sensus shall provide Customer with Software as a Service, as defined in Exhibit A, only so long as Customer is current in its payments for such services.
   B. UCITA. To the maximum extent permitted by law, the Parties agree that the Uniform Computer Information Transaction Act as enacted by any state shall not apply, in whole or in part, to this Agreement.
4. Spectrum
   A. Definitions in this Section 4. In this Section 4 only, "Sensus" shall mean Sensus USA Inc. and its wholly owned subsidiary, Sensus Spectrum LLC.
   B. Spectrum Lease. Sensus hereby grants to Customer, and Customer accepts, a spectrum manager lease ("Spectrum Lease") over the frequencies of certain FCC license(s) ("FCC License") solely within Customer's Service Territory. (The frequencies of the FCC License within Customer's geographic Service Territory are called the "Leased Spectrum"). Customer shall pay the Ongoing Fees for use of the Leased Spectrum.
   C. FCC Forms. At the Federal Communications Commission (FCC), Sensus will; (1) obtain an FCC Registration Number (FRN) for Customer; (2) submit on behalf of Customer the FCC Form 602 Ownership Disclosure Information if Customer has not already done so; and (3) file a FCC Form 608, notification/application for long-term spectrum manager lease. This Lease becomes effective when the FCC accepts the FCC Form 608.
   D. Lease Application. In order to complete the FCC lease application, Customer will promptly:
      i. Complete and sign the representations in Part 1 of this Agreement such that Customer demonstrates it qualifies for a spectrum lease under FCC rules. Customer's signature will indicate that Customer authorizes Sensus to; (1) obtain an FRN on behalf of Customer; (2) submit the FCC Form 602 Ownership Disclosure Information on behalf of Customer if Customer has not already done so; and (3) file the spectrum manager lease notification on FCC Form 608 with the Customer as spectrum lessee.
      ii. Give Sensus the coordinates of the boundaries of Customer's Service Territory or, alternatively, approve Sensus' estimation of the same.
      iii. If Customer has not already done so; Customer hereby authorizes Sensus to apply on Customer's behalf and obtain for Customer a Federal Registration Number (FRN, the FCC's unique identifier for each licensee) and shall supply Sensus with Customer's Taxpayer Identification Number (TIN).
      iv. Provide any other information or other cooperation reasonably necessary for the Parties to perform as set forth herein.
   E. Permitted Use of Spectrum Lease. Customer may transmit or receive over the Leased Spectrum only in the Service Territory and only using FlexNet equipment manufactured by Sensus and used in accordance with Sensus' specifications. Customer may use the Leased Spectrum only to read and direct meters in support of Customer's primary utility business or any other operation approved by Sensus in writing. Without limiting the foregoing, Customer is prohibited from reselling, subleasing or sublicensing the Leased Spectrum or from transmitting voice communications over the Leased Spectrum. For each piece of RF Field Equipment used by Customer, Customer shall affix a Sensus-supplied label to the exterior of the RF Field Equipment cabinet or other appropriate visible place to indicate that RF operation is conducted under authority of FCC License(s) issued to Sensus.
   F. Term of Spectrum Lease. Unless terminated earlier (because, for example, Customer stops using the FlexNet equipment or because this Agreement terminates or expires for any reason), this Spectrum Lease will have the same term as the FCC license. If Customer is operating in compliance with this Agreement and is current on any payments owed to Sensus, when the FCC License renews, the Parties will apply to the FCC to renew this Spectrum Lease.
   G. Termination of Spectrum Lease. The Spectrum Lease will terminate: (a) two months after Customer stops transmitting with FlexNet equipment manufactured by Sensus; (b) upon termination, revocation or expiration of the FCC License; (c) upon Customer's breach of this Agreement; or (d) upon termination or expiration of this Agreement for any reason.
   H. FCC Compliance. The following FCC requirements apply
      i. Pursuant to 47 CFR 1.9040(a);
         (a) Customer must comply at all times with applicable FCC rules. This Agreement may be revoked by Sensus or the FCC if Customer fails to so comply;
         (b) If the FCC License is terminated, Customer has no continuing right to use the Leased Spectrum unless otherwise authorized by the FCC;
         (c) This Agreement is not an assignment, sale or other transfer of the FCC License;
         (d) This Agreement may not be assigned except upon written consent of Sensus, which consent may be withheld in its discretion; and
         (e) In any event, Sensus will not consent to an assignment that does not satisfy FCC rules.

ii. Referencing 47 CFR 1.9010, Sensus retains *de jure* and *de facto* control over the applicable radio facilities, including that,

(a) Sensus will be responsible for Customer's compliance with FCC policies and rules. Sensus represents and warrants that it has engineered the FlexNet equipment and accompanying software and other programs to comply with FCC rules. Customer will operate the FlexNet equipment subject to Sensus' supervision and control and solely in accordance with Sensus' specifications. Sensus retains the right to inspect Customer's radio operations hereunder and to terminate this Agreement or take any other necessary steps to resolve a violation of FCC rules, including to order Customer to cease transmission. Sensus will act as spectrum manager in assigning spectrum under the FCC License so as to avoid any harmful interference or other violation of FCC rules. Sensus will be responsible for resolving any interference complaints or other FCC rule violations that may arise; and

(b) Sensus will file any necessary FCC forms or applications and Customer agrees to reasonably assist Sensus with such filing by providing any necessary information or other cooperation. Sensus will otherwise interact with the FCC with respect to this Agreement, the FCC License or FlexNet equipment.

I. Interference. Customer agrees to report to Sensus promptly, and in no event later than 72 hours afterward, any incident related to the Leased Spectrum, including where Customer experiences harmful interference, receives a complaint or other notice of having caused harmful interference, or receives any type of communication from the FCC or other government agency regarding radio transmission.

5. General Terms and Conditions.

A. Intentionally Omitted

B. Limitation of Liability.

i. Sensus' aggregate liability in any and all causes of action arising under, out of or in relation to this Agreement, its negotiation, performance, breach or termination (collectively "Causes of Action") shall not exceed the greater of; (a) the total amount paid by Customer directly to Sensus under this Agreement; or (b) ten thousand US dollars (USD 10,000.00). This is so whether the Causes of Action are in tort, including, without limitation, negligence or strict liability, in contract, under statute or otherwise. As separate and independent limitations on liability, Sensus' liability shall be limited to direct damages. Sensus shall not be liable for; (i) any indirect, incidental, special or consequential damages; nor (ii) any revenue or profits lost by Customer or its Affiliates from any End User(s), irrespective whether such lost revenue or profits is categorized as direct damages or otherwise; nor (iii) any In/Out Costs; nor (iv) manual meter read costs and expenses; nor (v) claims made by a third party; nor (vi) damages arising from maincase or bottom plate breakage caused by freezing temperatures, water hammer conditions, or excessive water pressure. The limitations on liability set forth in this Agreement are fundamental inducements to Sensus entering into this Agreement. They apply unconditionally and in all respects. They are to be interpreted broadly so as to give Sensus the maximum protection permitted under law.

ii. To the maximum extent permitted by law, no Cause of Action may be instituted by Customer against Sensus more than TWELVE (12) MONTHS after the Cause of Action first arose. In the calculation of any damages in any Cause of Action, no damages incurred more than TWELVE (12) MONTHS prior to the filing of the Cause of Action shall be recoverable.

C. Termination. Either party may terminate this Agreement earlier if the other party commits a material breach of this Agreement and such material breach is not cured within forty-five (45) days of written notice by the other party. Upon any expiration or termination of this Agreement, Sensus' and Customer's obligations hereunder shall cease and the software as a service and Spectrum Lease shall immediately cease.

D. Force Majeure. If either party becomes unable, either wholly or in part, by an event of Force Majeure, to fulfill its obligations under this Agreement, the obligations affected by the event of Force Majeure will be suspended during the continuance of that inability. The party affected by the force majeure will take reasonable steps to mitigate the Force Majeure.

E. Intellectual Property. No Intellectual Property is assigned to Customer hereunder. Sensus shall own or continue to own all Intellectual Property used, created, and/or derived in the course of performing this Agreement. To the extent, if any, that any ownership interest in and to such Intellectual Property does not automatically vest in Sensus by virtue of this Agreement or otherwise, and instead vests in Customer, Customer agrees to grant and assign and hereby does grant and assign to Sensus all right, title, and interest that Customer may have in and to such Intellectual Property. Customer agrees not to reverse engineer any Equipment purchased or provided hereunder.

F. Confidentiality. Both parties shall (and shall cause their employees and contractors to) keep all Confidential Information strictly confidential and shall not disclose it to any third party, except to the extent reasonably required to perform and enforce this Agreement or as required under applicable law, court order or regulation. The Confidential Information may be transmitted orally, in writing, electronically or otherwise observed by either party. Notwithstanding the foregoing, "Confidential Information" shall not include; (i) any information that is in the public domain other than due to Recipient's breach of this Agreement; (ii) any information in the possession of the Recipient without restriction prior to disclosure by the Discloser; or (iii) any information independently developed by the Recipient without reliance on the information disclosed hereunder by the Discloser. "Discloser" means either party that discloses Confidential Information, and "Recipient" means either party that receives it.

G. Compliance with Laws. Customer shall comply with all applicable country, federal, state, and local laws and regulations, as set forth at the time of acceptance and as may be amended, changed, or supplemented. Customer shall not take any action, or permit the taking of any action by a third party, which may render Sensus liable for a violation of applicable laws.

i. Export Control Laws. Customer shall; (i) comply with all applicable U.S. and local laws and regulations governing the use, export, import, re-export, and transfer of products, technology, and services; and (ii) obtain all required authorizations, permits, and licenses. Customer shall immediately notify Sensus, and immediately cease all activities with regards to the applicable transaction, if the Customer knows or has a reasonable suspicion that the equipment, software, or services provided hereunder may be directed to countries in violation of any export control laws. By ordering equipment, software or services, Customer certifies that it is not on any U.S. government export exclusion list.

ii. Anti-Corruption Laws. Customer shall comply with the United States Foreign Corrupt Practices Act (FCPA), 15 U.S.C. §§ 78dd-1, et seq.; laws and regulations implementing the OECD's Convention on Combating Bribery of Foreign Public Officials in International Business Transactions; the U.N. Convention Against Corruption; the Inter-American Convention Against Corruption; and any other applicable laws and regulations relating to anti-corruption in the Customer's county or any country where performance of this Agreement, or delivery or use of equipment, software or services will occur.

H. Non-Waiver of Rights. A waiver by either party of any breach of this Agreement or the failure or delay of either party to enforce any of the articles or other provisions of this Agreement will not in any way affect, limit or waive that party's right to enforce and compel strict compliance with the same or other articles or provisions.

I. Assignment and Sub-contracting. Either party may assign, transfer or delegate this Agreement without requiring the other party's consent; (i) to an Affiliate; (ii) as part of a merger; or (iii) to a purchaser of all or substantially all of its assets. Apart from the foregoing, neither party may assign, transfer or delegate this Agreement without the prior written consent of the other, which consent shall not be unreasonably withheld. Furthermore, Customer acknowledges Sensus may use subcontractors to perform RF Field Equipment installation, the systems integration work (if applicable), or project management (if applicable), without

requiring Customer's consent.

J. Amendments. No alteration, amendment, or other modification shall be binding unless in writing and signed by both Customer and by a vice president (or higher) of Sensus.

K. Governing Law and Dispute Resolution. This Agreement shall be governed by, construed and enforced in accordance with the laws of the State of Delaware. Any and all disputes arising under, out of, or in relation to this Agreement, its negotiation, performance or termination ("Disputes') shall first be resolved by the Parties attempting mediation in Delaware. If the Dispute is not resolved within sixty (60) days of the commencement of the mediation, it shall be litigated in the state or federal courts located in Delaware. TO THE MAXIMUM EXTENT PERMITTED BY LAW, THE PARTIES AGREE TO A BENCH TRIAL AND THAT THERE SHALL BE NO JURY IN ANY DISPUTES.

L. Restriction on Discovery. The Parties acknowledge the abundance of documents, data, and other information stored in an electronic manner and the time and costs associated with retrieving relevant electronic data from the Parties during the Discovery portion of a claim. Accordingly, the Parties shall utilize only printed or hard-copy documents, data, and other information in Discovery and shall not use or request electronic or e-Discovery methods for any claim, demand, arbitration or litigation subject to this Agreement. All relevant and unprivileged printed or hard-copy materials shall be subject to Discovery, but neither Party has an obligation to maintain printed or hard-copy files in anticipation of a claim, demand, litigation, or arbitration proceeding.

M. Survival. The provisions of this Agreement that are applicable to circumstances arising after its termination or expiration shall survive such termination or expiration.

N. Severability. In the event any provision of this Agreement is held to be void, unlawful or otherwise unenforceable, that provision will be severed from the remainder of the Agreement and replaced automatically by a provision containing terms as nearly like the void, unlawful, or unenforceable provision as possible; and the Agreement, as so modified, will continue to be in full force and effect.

O. Four Corners. This written Agreement, including all of its exhibits, represents the entire understanding between and obligations of the parties and supersedes all prior understandings, agreements, negotiations, and proposals, whether written or oral, formal or informal between the parties. Any additional writings shall not modify any limitations or remedies provided in the Agreement. There are no other terms or conditions, oral, written, electronic or otherwise. There are no implied obligations. All obligations are specifically set forth in this Agreement. Further, there are no representations that induced this Agreement that are not included in it. The ONLY operative provisions are set forth in writing in this Agreement. Without limiting the generality of the foregoing, no purchase order placed by or on behalf of Customer shall alter any of the terms of this Agreement. The parties agree that such documents are for administrative purposes only, even if they have terms and conditions printed on them and even if and when they are accepted and/or processed by Sensus. Any goods, software or services delivered or provided in anticipation of this Agreement (for e.g., as part of a pilot or because this Agreement has not yet been signed but the parties have begun the deployment) under purchase orders placed prior to the execution of this Agreement are governed by this Agreement upon its execution and it replaces and supersedes any such purchase orders.

P. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Additionally, this Agreement may be executed by facsimile or electronic copies, all of which shall be considered an original for all purposes.

6. Definitions. As used in this Agreement, the following terms shall have the following meanings:

A. **"***Affiliate***"** of a party means any other entity controlling, controlled by, or under common control with such party, where "control" of an entity means the ownership, directly or indirectly, of 50% or more of either; (i) the shares or other equity in such entity; or (ii) the voting rights in such entity.

B. **"***AMI System***"** identifies the Sensus FlexNet Advanced Meter Infrastructure System comprised of the SmartPoint Modules, RF Field Equipment, Server Hardware, software licenses, FCC licenses, and other equipment provided to Customer hereunder. The AMI System only includes the foregoing, as provided by Sensus. The AMI System does not include goods, equipment, software, licenses or rights provided by a third party or parties to this Agreement.

C. "*Confidential Information*" means any and all non-public information of either party, including the terms of this agreement, all technical information about either party's products or services, pricing information, marketing and marketing plans, Customer's End Users' data, AMI System performance, AMI System architecture and design, AMI System software, other business and financial information of either party, and all trade secrets of either party.

D. "*Echo Transceiver*" identifies the Sensus standalone, mounted relay device that takes the radio frequency readings from the SmartPoint Modules and relays them by radio frequency to the relevant FlexNet Base Station.

E. **"***End User***"** means any end user of electricity, water, and/or gas (as applicable) that pays Customer for the consumption of electricity, water, and/or gas, as applicable.

F. "*Field Devices*" means the meters and SmartPoint Modules.

G. "*FlexNet Base Station*" identifies the Sensus manufactured device consisting of one transceiver, to be located on a tower that receives readings from the SmartPoint Modules (either directly or via an Echo Transceiver) by radio frequency and passes those readings to the RNI by TCP/IP backhaul communication. For clarity, FlexNet Base Stations include Metro Base Stations.

H. "*Force Majeure*" means an event beyond a party's reasonable control, including, without limitation, acts of God, hurricane, flood, volcano, tsunami, tornado, storm, tempest, mudslide, vandalism, illegal or unauthorized radio frequency interference, strikes, lockouts, or other industrial disturbances, unavailability of component parts of any goods provided hereunder, acts of public enemies, wars, blockades, insurrections, riots, epidemics, earthquakes, fires, restraints or prohibitions by any court, board, department, commission or agency of the United States or any States, any arrests and restraints, civil disturbances and explosion.

I. "*Hosted Software*" means those items listed as an Application in Exhibit A.

J. "*In/Out Costs*" means any costs and expenses incurred by Customer in transporting goods between its warehouse and its End User's premises and any costs and expenses incurred by Customer in installing, uninstalling and removing goods.

K. "*Intellectual Property*" means patents and patent applications, inventions (whether patentable or not), trademarks, service marks, trade dress, copyrights, trade secrets, know-how, data rights, specifications, drawings, designs, maskwork rights, moral rights, author's rights, and other intellectual property rights, including any derivations and/or derivative works, as may exist now or hereafter come into existence, and all renewals and extensions thereof, regardless of whether any of such rights arise under the laws of the United States or of any other state, country or jurisdiction, any registrations or applications thereof, and all goodwill pertinent thereto.

L. "*LCM*" identifies the load control modules.

M. **"***Ongoing Fee***"** means the annual or monthly fees, as applicable, to be paid by Customer to Sensus' authorized distributor during the Term of this Agreement.

N. "*Patches*" means patches or other maintenance releases of the Software that correct processing errors and other faults and defects found previous versions of the Software. For clarity, Patches are not Updates or Upgrades.

O. "*Permitted Use"* means only for reading and analyzing data from Customer's Field Devices in the Service Territory. The Permitted Use does not include reading third party meters or reading meters outside the Service Territory.

P. "*Release*" means both Updates and Upgrades.

Q. "*Remote Transceiver*" identifies the Sensus standalone, mounted relay device that takes the radio frequency readings from the SmartPoint Modules and relays them directly to the RNI by TCP/IP backhaul communication.

R. "*RF Field Equipment*" means, collectively, FlexNet Base Stations, Echo Transceivers and Remote Transceivers.

S. "*RNI*" identifies the regional network interfaces consisting of hardware and software used to gather, store, and report data collected by the FlexNet Base Stations from the SmartPoint Modules. The RNI hardware specifications will be provided by Sensus upon written request from Customer.

T. "*RNI Software*" identifies the Sensus proprietary software used in the RNI and any Patches, Updates, and Upgrades that are provided to Customer pursuant to the terms of this Agreement.

U. "*Service Territory*" identifies the geographic area where Customer provides electricity, water, and/or gas (as applicable) services to End Users as of the Effective Date. This area will be described on the propagation study in the parties' Spectrum Lease filing with the FCC.

V. "*Server Hardware*" means the RNI hardware.

W. "*SmartPoint™ Modules*" identifies the Sensus transmission devices installed on devices such as meters, distribution automation equipment and demand/response devices located at Customer's End Users' premises that take the readings of the meters and transmit those readings by radio frequency to the relevant FlexNet Base Station, Remote Transceiver or Echo Transceiver.

X. "*Software*" means all the Sensus proprietary software provided pursuant to this Agreement, and any Patches, Updates, and Upgrades that are provided to Customer pursuant to the terms of this Agreement. The Software does not include any third party software.

Y. "*TouchCoupler Unit*" identifies an inductive coupler connection from a water register to the SmartPoint Module.

Z. **"***Updates***"** means releases of the Software that constitute a minor improvement in functionality.

AA. "*Upgrades*" means releases of the Software which constitute a significant improvement in functionality or architecture of the Software.

BB. **"***WAN Backhaul***"** means the communication link between FlexNet Base Stations and Remote Transceivers and RNI.

Exhibit A
Software

Software as a Service

I. Description of Services

This exhibit contains the details of the Software as a Service that Sensus shall provide to Customer if both; (i) pricing for the application of Software as a Service has been provided to the Customer; and (ii) the Customer is current in its payments for such application of Software as a Service.

A. Software as a Service Generally.

Software as a Service is a managed service in which Sensus will be responsible for the day-to-day monitoring, maintenance, management, and supporting of Customer's software applications. In a Software as a Service solution, Sensus owns all components of the solution (server hardware, storage, network equipment, Sensus software, and all third-party software) required to run and operate the application. These software applications consist of the following (each an "Application"):

- Regional Network Interface (RNI) Software
- Sensus Analytics
  - Enhanced Package

The managed application systems consist of the hardware, Sensus Software, and other third-party software that is required to operate the software applications. Each Application will have a production, and Disaster Recovery (as described below) environment. Test environments are not provided unless otherwise specifically agreed by Sensus in writing. Sensus will manage the Applications by providing 24 x 7 x 365 monitoring of the availability and performance of the Applications.

B. Usage License. Subject to all the terms and conditions of this Agreement, Sensus hereby gives Customer a license under Sensus' intellectual property rights to use the Sensus Applications for the Permitted Use for so long as Customer is current in its payments for the Applications ("Usage License"). This Usage License shall commence on the Effective Date and shall terminate upon the earlier of; (i) the expiration or termination of this Agreement for any reason; (ii) if Customer uses the Applications provided hereunder other than for the Permitted Use; and (iii) the Application is terminated as set forth below.

C. Termination of Software as a Service. Customer shall have the option at any time after full deployment but before the end of the Term to terminate any Application by giving Sensus one hundred twenty (120) days prior written notice. Such notice, once delivered to Sensus, is irrevocable. Should Customer elect to terminate any Application, Customer acknowledges that; (a) Customer shall pay all applicable fees, including any unpaid Software as a Service fees; and (b) Software as a Service for such Application shall immediately cease. If Customer elects to terminate the RNI Application in the Software as a Service environment but does not terminate the Agreement generally, then upon delivery of the notice to Sensus, Customer shall purchase the necessary (a) RNI hardware and (b) RNI software license, each at Sensus' then-current pricing. No portion of the Software as a Service fees shall be applied to the purchase of the RNI hardware or software license.

D. "Software as a Service" means only the following services:

i. Sensus will provide the use of required hardware, located at Sensus' or a third-party's data center facility (as determined by Sensus), that is necessary to operate the Application.

ii. Sensus will provide production and disaster recovery environments for Application.

iii. Sensus will provide patches, updates, and upgrades to latest Sensus Hosted Software release.

iv. Sensus will configure and manage the equipment (server hardware, routers, switches, firewalls, etc.) in the data centers:
   - Network addresses and virtual private networks (VPN)
   - Standard time source (NTP or GPS)
   - Security access points
   - Respond to relevant alarms and notifications

v. Capacity and performance management. Sensus will:
   - Monitor capacity and performance of the Application server and software applications 24x7 using KPI metrics, thresholds, and alerts to proactively identify any potential issues related to system capacity and/or performance (i.e. database, backspool, logs, message broker storage, etc.)
   - If an issue is identified to have a potential impact to the system, Sensus will open an incident ticket and manage the ticket through resolution per Exhibit B, Technical Support.
   - Manage and maintain the performance of the server and perform any change or configuration to the server, in accordance to standard configuration and change management policies and procedures.
   - Manage and maintain the server storage capacity and performance of the Storage Area Network (SAN), in accordance to standard configuration and change management policies and procedures.
   - Exceptions may occur to the system that require Sensus to take immediate action to maintain the system capacity and performance levels, and Sensus has authority to make changes without Customer approval as needed, in accordance to standard configuration and change management policies and procedures.

vi. Database management. Sensus will:
   - Define data retention plan and policy.
   - Monitor space and capacity requirements.
   - Respond to database alarms and notifications.
   - Install database software upgrades and patches.
   - Perform routine database maintenance and cleanup of database to improve capacity and performance, such as rebuilding indexes, updating indexes, consistency checks, run SQL query/agent jobs, etc.

vii. Incident and Problem Management. Sensus will:
   - Proactively monitor managed systems (24x7x365) for key events and thresholds to proactively detect and identify incidents.
   - Respond to incidents and problems that may occur to the Application(s).
   - Maintain policies and procedures for responding to incidents and performing root cause analysis for ongoing problems.
   - Correlate incidents and problems where applicable.
   - Sensus personnel will use the Salesforce Self Service Portal to document and track incidents.
   - In the event that a Sensus personnel is unable to resolve an issue, the issue will be escalated to the appropriate Subject Matter Expert

(SME).

Maintain responsibility for managing incident and problems through resolution and will coordinate with Customer's personnel and/or any required third-party vendor to resolve the issue.

Provide telephone support consistent with Exhibit B, Technical Support in the case of undetected events.

viii. Security Management. Sensus will:

Monitor the physical and cyber security of the server and Application(s) 24x7 to ensure system is highly secure in accordance with NIST Security Standards.

Perform active intrusion prevention and detection of the data center network and firewalls, and monitor logs and alerts.

Conduct period penetration testing of the network and data center facilities.

Conduct monthly vulnerability scanning by both internal staff and external vendors.

Perform Anti-Virus and Malware patch management on all systems.

Install updates to virus protection software and related files (including Virus signature files and similar files) on all servers from the update being generally available from the anti-virus software provider.

Respond to any potential threat found on the system and work to eliminate Virus or Malware found.

Sensus adheres to and submits certification to NERC/CIP Cyber Security standards.

Sensus actively participates/monitors industry regulation/standards regarding security – NERC, FERC, NIST, OpenSG, etc. through the dedicated Sensus Security team.

Provide secure web portal access (SSL) to the Application(s).

ix. Backup and Disaster Recovery Management. Sensus will:

Perform daily backups of data providing one (1) year of history for auditing and restoration purposes.

Back-up and store data (on tapes or other storage media as appropriate) off-site to provide protection against disasters and to meet file recovery needs.

Conduct incremental and full back-ups to capture data, and changes to data, on the Application(s).

Sensus will replicate the Application(s) environments to a geographically separated data center location to provide a full disaster recovery environment for the Application production system.

Provide disaster recovery environment and perform fail-over to DR environment within forty-eight (48) hours of declared event.

Generate a report following each and any disaster measuring performance against the disaster recovery plan and identification of problem areas and plans for resolution.

Maintain a disaster recovery plan. In the event of a disaster, Sensus shall provide the services in accordance with the disaster recovery plan.

In the case of a disaster and loss of access to or use of the Application, Sensus would use commercially reasonable efforts per the Recovery Time Objectives and Recovery Point Objectives specified herein to restore operations at the same location or at a backup location within forty-eight (48) hours.

The Application shall have a Recovery Time Objective (RTO) of forty-eight (48) hours.

The Recovery Point Objective (RPO) shall be a full recovery of the Application(s), with an RPO of one (1) hours, using no more than a twenty-four (24) hour old backup. All meter-related data shall be pushed from each Base Station/TGB restoring the database to real-time minus external interfaced systems from the day prior.

Data from external interfaced systems shall be recreated within a forty-eight (48) hour period with the assistance of Customer personnel and staff, as needed.

E. Customer Responsibilities:

i. Coordinate and schedule any changes submitted by Sensus to the system in accordance with standard configuration and change management procedures.
ii. Participate in all required configuration and change management procedures.
iii. Customer will log incidents related to the managed Application with Sensus personnel via email, web portal ticket entry, or phone call.
iv. Responsible for periodic processing of accounts or readings (i.e. billing files) for Customer's billing system for billing or other analysis purposes.
v. Responsible for any field labor to troubleshoot any SmartPoint modules or smart meters in the field in populations that have been previously deployed and accepted.
vi. First response labor to troubleshoot FlexNet Base Station, Echo Transceivers, Remote Transceivers or other field network equipment.
vii. Responsible for local area network configuration, management, and support.
viii. Identify and research problems with meter reads and meter read performance.
ix. Create and manage user accounts.
x. Customize application configurations.
xi. Support application users.
xii. Investigate application operational issues (e.g. meter reads, reports, alarms, etc.).
xiii. Respond to alarms and notifications.
xiv. Perform firmware upgrades over-the-air, or delegate and monitor field personnel for on-site upgrades.

F. "Software as a Service" does not include any of the following services:

i. Parts or labor required to repair damage to any field network equipment that is the result of a Force Majeure event.
ii. Any integration between applications, such as Harris MeterSense, would require a Professional Services contract agreement to be scoped, submitted, and agreed in a signed writing between Sensus and all the applicable parties.

If an item is not listed in subparagraphs in item (D) above, such item is excluded from the Software as a Service and is subject to additional pricing.

II. Further Agreements

A. System Uptime Rate

i. Sensus (or its contractor) shall manage and maintain the Application(s) on computers owned or controlled by Sensus (or its contractors) and

shall provide Customer access to the managed Application(s) via internet or point to point connection (i.e., Managed-Access use), according to the terms below. Sensus endeavors to maintain an average System Uptime Rate equal to ninety-nine (99.0) per Month (as defined below). The System Uptime Rate, cumulative across all Applications, shall be calculated as follows:

$$\text{System Uptime Rate} = 100 \times \frac{\text{(TMO – Total Non-Scheduled Downtime minutes in the Month)}}{\text{TMO}}$$

i. Calculations
   a. "*Targeted Minutes of Operation*" or "*TMO*" means total minutes cumulative across all Applications in the applicable month ("Month") minus the Scheduled Downtime in the Month.
   b. "*Scheduled Downtime*" means the number of minutes during the Month, as measured by Sensus, in which access to any Application is scheduled to be unavailable for use by Customer due to planned system maintenance. Sensus shall provide Customer notice (via email or otherwise) at least seven (7) days in advance of commencement of the Scheduled Downtime.
   c. "*Non-Scheduled Downtime*" means the number of minutes during the Month, as measured by Sensus, in which access to any Application is unavailable for use by Customer due to reasons other than Scheduled Downtime or the Exceptions, as defined below (e.g., due to a need for unplanned maintenance or repair).

ii. Exceptions. "Exceptions" mean the following events:
   a. Force Majeure;
   b. Emergency Work, as defined below; and
   c. Lack of Internet Availability, as described below.

i. Emergency Work. In the event that Force Majeure, emergencies, dangerous conditions or other exceptional circumstances arise or continue during TMO, Sensus shall be entitled to take any actions that Sensus, in good faith, determines is necessary or advisable to prevent, remedy, mitigate, or otherwise address actual or potential harm, interruption, loss, threat, security or like concern to any of the Application(s) ("Emergency Work"). Such Emergency Work may include, but is not limited to: analysis, testing, repair, maintenance, re-setting and other servicing of the hardware, cabling, networks, software and other devices, materials and systems through which access to and/or use of the Application(s) by the Customer is made available (the "Managed Systems"). Sensus shall endeavor to provide advance notice of such Emergency Work to Customer when practicable and possible.

ii. Lack of Internet Availability. Sensus shall not be responsible for any deterioration of performance attributable to latencies in the public internet or point-to-point network connection operated by a third party. Customer expressly acknowledges and agrees that Sensus does not and cannot control the flow of data to or from Sensus' networks and other portions of the Internet, and that such flow depends in part on the performance of Internet services provided or controlled by third parties, and that at times, actions or inactions of such third parties can impair or disrupt data transmitted through, and/or Customer's connections to, the Internet or point-to-point data connection (or portions thereof). Although Sensus will use commercially reasonable efforts to take actions Sensus may deem appropriate to mitigate the effects of any such events, Sensus cannot guarantee that such events will not occur. Accordingly, Sensus disclaims any and all liability resulting from or relating to such events.

B. Data Center Site-Security. Although Sensus may modify such security arrangements without consent or notice to Customer, Customer acknowledges the following are the current arrangements regarding physical access to and support of the primary hardware components of the Managed Systems:
   i. The computer room(s) in which the hardware is installed is accessible only to authorized individuals.
   ii. Power infrastructure includes one or more uninterruptible power supply (UPS) devices and diesel generators or other alternative power for back-up electrical power.
   iii. Air-conditioning facilities (for humidity and temperature controls) are provided in or for such computer room(s) and can be monitored and adjusted for humidity and temperature settings and control. Such air systems are supported by redundant, back-up and/or switch-over environmental units.
   iv. Such electrical and A/C systems are monitored on an ongoing basis and personnel are available to respond to system emergencies (if any) in real time.
   v. Dry pipe pre-action fire detection and suppression systems are provided.
   vi. Data circuits are available via multiple providers and diverse paths, giving access redundancy.

C. Responsibilities of Customer
   i. Customer shall promptly pay all Software as a Service fees.
   ii. Customer may not (i) carelessly, knowingly, intentionally or maliciously threaten, disrupt, harm, abuse or interfere with the Application(s), Managed Systems or any of their functionality, performance, security or integrity, nor attempt to do so; (ii) impersonate any person or entity, including, but not limited to, Sensus, a Sensus employee or another user; or (iii) forge, falsify, disguise or otherwise manipulate any identification information associated with Customer's access to or use of the Application(s).
   iii. The provisioning, compatibility, operation, security, support, and maintenance of Customer's hardware and software ("Customer's Systems") is exclusively the responsibility of Customer. Customer is also responsible, in particular, for correctly configuring and maintaining (i) the desktop environment used by Customer to access the Application(s) managed by Sensus; and (ii) Customer's network router and firewall, if applicable, to allow data to flow between the Customer's Systems and Sensus' Managed Systems in a secure manner via the public Internet.
   iv. Upon receiving the system administrator account from Sensus, Customer shall create username and passwords for each of Customer's authorized users and complete the applicable Sensus registration process ("Authorized Users"). Such usernames and passwords will allow Authorized Users to access the Application(s). Customer shall be solely responsible for maintaining the security and confidentiality of each user ID and password pair associated with Customer's account, and Sensus will not be liable for any loss, damage or liability arising from Customer's account or any user ID and password pairs associated with Customer. Customer is fully responsible for all acts and omissions that occur through the use of Customer's account and any user ID and password pairs. Customer agrees (i) not to allow anyone other than the Authorized Users to have any access to, or use of Customer's account or any user ID and password pairs at any time; (ii) to notify Sensus immediately of any actual or suspected unauthorized use of Customer's account or any of such user ID and password pairs, or any other breach or suspected breach of security, restricted use or confidentiality; and (iii) to take the Sensus-recommended steps to log out from and otherwise exit the Application(s) and Managed Systems at the end of each session. Customer agrees that Sensus shall be entitled to rely, without inquiry, on the validity of the user accessing the Application(s) application through Customer's account, account ID, usernames or passwords.
   v. Customer shall be responsible for the day-to-day operations of the Application(s) and AMI System. This includes, without limitation, (i) researching problems with meter reads and system performance, (ii) creating and managing user accounts, (iii) customizing application

configurations, (iv) supporting application users, (v) investigating application operational issues, (vi) responding to alarms and notifications, and (vii) performing over-the-air commands (such as firmware updates or configuration changes).

III. Sensus Analytics

A. Essential Package. The Essential Package of the Sensus Analytics Application shall consist of the following modules:

i. Device Access
   a. Allows search for meter details by using data imported from the Billing system or the Sensus Device ID or AMI ID.
   b. Allows a view of the meter interval or register reads.
   c. Meter data is available to be copied, printed, or saved to certain user programs or file formats, specifically CSV, PDF, and Spreadsheet.
   d. Allows the current and historical data to be viewed.
   e. Allows the current usage to be compared to historical distribution averages.
   f. Allows the user to see the meter location on a map view.
   g. Allows notifications for an event on a single meter to be forwarded to a Customer employee.
   h. Allows details to be viewed about a meter – (dependent on the data integrated from other systems).

ii. Meter Insight (provides the following)
   a. # of active meters.
   b. # of orphaned meters with drill down to the list of meters.
   c. # of inactive meters with drill down to the list of meters.
   d. # of stale meters with drill down to the list of meters.
   e. # of almost stale meters with drill down to the list of meters.
   f. # of meters where no read is available with drill down to the list of meters.
   g. # of meters with high threshold exceptions with drill down to the list of meters.
   h. # of unknown radios with drill down to the list of meters.

iii. Report Access
   a. Allows the user to see meter alarms and choose a report from a list of standard reports.
   b. Master Route Register Reads: Shows the latest reads for all meters within specified time window.
   c. Meter Route Intervals Reads: Allows users to inspect intervals of a single meter over a period of time.
   d. Master Route No Readings: List all meters that are active in the system, but have not been sending reads within the specified time window.
   e. Consumption Report: List meters' consumption based on meter readings within the specified time window.
   f. Zero Consumption for Period: List meters whose readings do not change over a period of time.
   g. Negative Consumption: Shows the number of occurrences and readings of negative consumption for the last 24hr, 48hr and 72hr from the entered roll up date.
   h. High Low Exception Report: Displays meters whose reads exceed minimum or/and maximum threshold, within a time range.
   i. Consumption vs Previous Reported Read: Compares latest reading (from RNI) with last known read received from CIS.
   j. Consumption Exception 24 hour Report: This report shows meters that satisfy these two conditions: (1) The daily average consumptions exceed entered "daily consumption threshold;" (2) The number of days when daily thresholds are exceeded are greater than the entered "exception per day threshold."
   k. Endpoint Details: Shows the current state of meters that are created within the specified time range.
   l. Orphaned Meters: List meters that are marked as 'orphaned', which are created as of entered "Created as of" parameter.
   m. Billing Request Mismatch: Displays meters in a billing request that have different AMR id with the ones sent by RNI. It also shows AMR id in billing request that have different meter Id in the RNI.
   n. Users need to enter which billing request file prior to running the report.
   o. Alarms Report: List all alarms occurred during a time window. Users can select which alarm to show.

iv. Billing Access
   a. Initiate the creation of billing export files formatted to the import needs of the billing system.
   b. Receive billing request files from the billing system to identify what meters to include in the billing export file in the case where billing request file option is used.
   c. Provides a repository of past billing files that were either used for billing preparation or actually send to the billing system.
   d. Will store created billing files for a period of three years unless otherwise denoted.
   e. The system will allow creation of test files before export to the billing system.

v. Billing Adaptor
   a. The underlying configurator and tools mapping the extraction of billing data to enable integration to the utility's billing system.

vi. Data Store
   a. Allows storage of meter reading data including Intervals, Registers, and Alarms to be stored.
   b. Stored data is available online for reports and analysis.
   c. Data will be retained for 3 years. Additional duration can be purchased.

B. Enhanced Package. The Enhanced Package shall consist of the modules listed above in the Essential Package, as well as the following additional modules:

i. Alarm Dashboard
   a. Allows the user to summarize and filter alarms by a date range.
   b. Allows the user to review all alarm types on a single screen.
   c. The user can filter out the alarms not wanted on the screen.
   d. Alarm totals can be visualized.
   e. Adds a view of trending alarms over time.
   f. Click to drill down on an alarm to gain more information on specific events.
   g. Click to analyze a specific event on a particular device.

ii. Alarm Console

a. Follow real time monitors of the alarms coming from Customer's meters.
b. Provides a single view for all alarms across the entire network.
c. Allows the user to view trending of each alarm over time.

iii. Alert Manager
a. Allows creation of alert groups who will be notified when an alarm occurs.
b. Users can manage alert groups by adding and removing group members.
c. Allows selection of notification method for how end users in the group will be notified; email or SMS (text message).
d. Allows creation of an alert from the available system events from smart points and assign to a group.
e. Monitors the systems meters for events. When an event is triggered, all users in the group will be notified.

D. Integration of Sensus Analytics. Sensus shall provide integration support services to Customer only to the extent specifically provided below:
i. Sensus shall provide Customer with a simple flat file specification known as VFlex for the integration of the Customer's back office system to the Sensus Analytics modules. This flat file may be delimited or fixed width. This specification allows Customer to transmit each day or as needed: the devices and end users in the system, end user status, end user account information, end user name, and other end user details. When sent to the Sensus FTP servers, this file exchange will enable the system to become operational with the Customer's systems. Customer shall produce this file and transmit it to the FTP location designated by Sensus. Sensus will provide reasonable support to explain to Customer the required vs. optional fields that are in the specification, testing and validation of the file format and content.
a. In scope of the included integration efforts is the mapping the Customer's fields to the VFlex specification.
b. Out of scope and subject to additional charges will be the transformation of data where business logic including code must be written to modify the field content or format of the data to meet the VFlex specification.
ii. Sensus' integration services consists of four (4) hours of assistance (remote or on-site, as determined by Sensus). If additional time is needed to complete the integration efforts, Sensus shall invoice Customer for additional fees on an actual time and materials basis.
iii. If an item is not listed in subparagraphs (i) or (ii) above, such item is excluded from the integration of Sensus Analytics Support and is subject to additional pricing.

E. Data Import. The Sensus Analytics Application contains adapters for the import of data from; (a) Customer's FlexNet AMI System; and/or (b) AutoRead application for handheld and drive by systems, as applicable.

F. Customer Acknowledgements.
i. Customer acknowledges that the Sensus Analytics Application provides up to fifty (50) user logins for Customer's use.
ii. Customer acknowledges and agrees the Sensus Analytics Application is based upon the actual number of End Users within Customer's Service Territory. Pricing may increase if Customer's Service Territory or actual number of End Users expands.
iii. Customer acknowledges that all data related to the Sensus Analytics Applications is geographically hosted within the United States of America. Customer accepts the geographic location of such hosting, and indemnifies Sensus for any claims resulting therefrom.
iv. Customer acknowledges and agrees that the Intellectual Property provisions of this Agreement apply in all respects to Customer's access to and use of the Sensus Analytics Applications.
v. Customer is responsible for validating the data analyzed by the Sensus Analytics Applications. Sensus makes no promises of improving Customer's operations or saving Customer money, nor is Sensus liable for any damages resulting from decisions made by Customer related to Customer's use of Sensus Analytics.

IV. Third Party Software.

A. RedHat Linux. If Sensus is providing Customer with a license to use RedHat Linux Software, Customer agrees to the following:

By entering into this Agreement, Customer agrees to abide by and to be legally bound by the terms and conditions of the Red Hat End User License Agreements identified below, each of which are incorporated into this Agreement by reference and are available at the websites identified below. Please read the Red Hat End User License Agreements and incorporated references carefully.

Subscription:	End User License Agreement:
Red Hat Enterprise Linux	http://www.redhat.com/licenses/rhel_rha_eula.html
JBoss Enterprise Middleware	http://www.redhat.com/licenses/jboss_eula.html

Exhibit B
Technical Support

1. Introduction

Sensus Technical Services provides utility customers with a single point of contact for Tier 1 support of technical issues as well as any coordination of additional resources required to resolve the issue. Requests that require specialized skills are to be forwarded to a senior support engineer or Technical Advisor within the team for further analysis. If Technical Services has exhausted all troubleshooting efforts for the product type, the issue will escalate to the Engineering Support Team. Occasionally, on-site troubleshooting/analysis may be required. The preferred order of on-site support is:

a) The Customer (for assistance with the easiest and lowest time-consuming activities such as power on/power off).

b) The local distributor.

c) Sensus employees or contracted personnel, if required to fulfill a contract commitment.

2. Support Categories

2.1. General questions regarding functionality, use of product, how-to, and requests for assistance on Sensus AMR, AMI, RF Network Equipment, Metering Products and Sensus Lighting Control.

2.2. Proactive reporting and resolution of problems.

2.3. Reactive reporting to isolate, document, and solve reported hardware/software defects.

2.4. Responding to service requests and product changes.

2.5. Addressing customer inquiries with printed or electronic documentation, examples, or additional explanation/clarification.

3. Support Hours

3.1. Standard Support Hours: Toll-free telephone support (1-800-638-3748 option #2) is available Monday thru Friday from 8:00AM EST to 8:00PM EST. After-hours, holiday and weekend support for Severity 1 and Severity 2 issues is available by calling 1-800-638-3748, option #8.

4. Support Procedures

4.1. Customer identifies an issue or potential problem and calls Technical Services at 1-800-638-3748 Option #2. The Customer Service Associate or Technical Support Engineer will submit a Support ticket.

4.2. The Customer Service Associate or Technical Support Engineer will identify the caller name and utility by the assigned software serial number, city, and state in which the call originated. The nature of the problem and severity levels will be agreed upon by both parties (either at the time the issue is entered or prior to upgrading or downgrading an existing issue) using the severity definitions below as a guideline. The severity level is then captured into a support ticket for creation and resolution processing. Any time during the processing of this ticket, if the severity level is changed by Sensus, the customer will be updated.

Severity Levels Description:

Sev1 Customer's production system is down. The system is unusable resulting in total disruption of work. No workaround is available and requires immediate attention.

Example: Network mass outage, all reading collection devices inoperable, inoperable head end software (e.g., RNI Software, Sensus MDM).

Sev2 Major system feature/function failure. Operations are severely restricted; there is a major disruption of work, no acceptable work-around is available, and failure requires immediate attention.

Examples: Network equipment failure (e.g., FlexNet Echo, FlexNet Remote, Base Station transceiver, or VGB); inoperable reading devices (e.g., AR5500, VXU, VGB, or CommandLink); head end software application has important functionality not working and cannot create export file for billing system operations.

Sev3 The system is usable and the issue doesn't affect critical overall operation.

Example: Minor network equipment failure (e.g., Echo/Remote false alarms or Base Station transceiver false alarms); head end software application operable but reports are not running properly, modification of view or some non-critical function of the software is not running.

Sev4 Minor system issues, questions, new features, or enhancement requests to be corrected in future versions.

Examples: Minor system issues, general questions, and "How-To" questions.

4.3. The Customer Service Associate or Technical Support Engineer identifies whether or not the customer is on support. If the customer is not on support, the customer is advised of the service options as well as any applicable charges that may be billed.

4.4. Calls are placed in a queue from which they are accessible to Technical Support Engineers on a first-come-first-serve basis. A first level Customer Service Associate may assist the customer, depending on the difficulty of the call and the representative's technical knowledge. Technical Support Engineers (Tier 1 support) typically respond/resolve the majority of calls based on their product knowledge and experience. A call history for the particular account is researched to note any existing pattern or if the call is a new report. This research provides the representative a basis and understanding of the account as well as any associated problems and/or resolutions that have been communicated.

a. Technical Services confirms that there is an issue or problem that needs further analysis to determine its cause. The following information must be collected: a detailed description of the issue's symptoms, details on the software/hardware product and version, a description of the environment in which the issue arises, and a list of any corrective action already taken.

b. Technical Services will check the internal database and product defect tracking system, to see if reports of a similar problem exist, and if any working solutions were provided. If an existing resolution is found that will address the reported issue, it shall be communicated to the customer. Once it is confirmed that the issue has been resolved, the ticket is closed.

c. If there is no known defect or support that defines the behavior, Technical Services will work with the customer to reproduce the issue. If the issue can be reproduced, either at the customer site or within support center test lab, Technical Services will escalate the ticket for further investigation / resolution.

If the issue involves units that are considered to be defective with no known reason, the representative will open a Special Investigation RMA

through the Support system. If it is determined that a sample is required for further analysis, the customer will be provided with instructions that detail where to send the product sample(s) for a root cause analysis. Once it is determined that the issue cannot be resolved by Tier 1 resources, the ticket will be escalated to Tier 2 support for confirmation/workarounds to resolve immediate issue. Technical Services will immediately contact the customer to advise of the escalation. The response and escalation times are listed in Section 5. At this time, screen shots, log files, configuration files, and database backups will be created and attached to the ticket.

5. Response and Resolution Targets.

Sensus Technical Support will make every reasonable effort to meet the following response and resolution targets:

Severity	Standard Target Response	Standard Target Resolution	Resolution (one or more of the following)
1	30 Minutes	Immediately assign trained and qualified Services Staff to correct the error on an expedited basis. Provide ongoing communication on the status of a correction.	• Satisfactory workaround is provided. • Program patch is provided. • Fix incorporated into future release. • Fix or workaround incorporated into the Support Knowledge Base.
2	4 hours	Assign trained and qualified Services Staff to correct the error. Provide communication as updates occur.	• Satisfactory workaround is provided. • Program patch is provided. • Fix incorporated into future release. • Fix or workaround incorporated into the Support Knowledge Base.
3	1 Business Day	90 business days	• Answer to question is provided. • Satisfactory workaround is provided. • Fix or workaround incorporated into the Support Knowledge Base. • Fix incorporated into future release.
4	2 Business Days	12 months	• Answer to question is provided. • Fix or workaround incorporated into the Support Knowledge Base.

6. Problem Escalation Process.

6.1. If the normal support process does not produce the desired results, or if the severity has changed, the issue may be escalated as follows to a higher level of authority.

6.1.1. Severity 1 issues are escalated by Sales or Technical Services to a Supervisor if not resolved within 2 hours; to the Manager level if not resolved within 4 hours; to the Director level if not resolved within the same business day; and to the VP level if not resolved within 24 hours.

6.1.2. A customer may escalate an issue by calling 1-800-638-3748, Option 2. Please specify the Support ticket number and the reason why the issue is being escalated.

6.1.3. In the event that a customer is not satisfied with the level of support or continual problem with their products, they may escalate a given Support ticket to Manager of Technical Services (1-800-638-3748, Option 2).

7. General Support Provisions and Exclusions.

7.1. Sensus provides online documentation for Sensus products through the Sensus User Forum (http://myflexnetsystem.com/Module/User/Login). All Sensus customers are provided access to this online database, which includes operation, configuration and technical manuals. Sensus also hosts periodic user group teleconferences to facilitate the interchange of product ideas, product enhancements, and overall customer experiences. The customer shall provide names and email accounts to Sensus so Sensus may provide access to the Portal.

7.2. Specialized support from Sensus is available on a fee basis to address support issues outside the scope of this support plan or if not covered under another specific maintenance contract. For example, specialized systems integration services or out of warranty network equipment repair that is not covered under a separate maintenance contract.

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 17.**
Meeting Date: 09/08/2016
COMMITTEE: N/A
CONTACT: Sharon Coll **CHAIR:** N/A

ACTION REQUESTED:

Appointments - Consider appointments to the Labor Management Relations Board, the Roswell Museum and Art Center, and the Chaves County Joy Center as presented by Mayor Kintigh. (Sanchez/Mayor Kintigh)

BACKGROUND:

The Labor Management Relations Board consists of three (3) members, the Roswell Museum and Art Center Board of Trustees consists of eleven (11) members, and the Chaves County Joy Center consists of seventeen (17) members which two represent the City of Roswell. For the purposes of appointments to the board, member(s) will be appointed to fill a specific membership position on the board which position shall be assigned a permanent number and a corresponding term. Positions shall be numbered to coincide with staggered terms so that all even numbered positions shall expire at the same time and all odd numbered positions shall expire at the same time.

FINANCIAL CONSIDERATION

Not applicable.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

Not applicable.

STAFF RECOMMENDATION:

Mayor Kintigh requests confirmation of the following appointments:

Labor Management Board
Position 1 - September 1, 2016 to August 31, 2017 - Rich Olson (Management Representative)
Position 2 - September 1, 2016 to August 31, 2017 - Eugene De los Santos (Neutral Representative)
Position 3 - September 1, 2016 to August 31, 2017 - Pauline Ponce (Labor Representative)

Roswell Museum and Art Center Board of Trustees
Position 10 - Partial term to end 3/31/2017 - Jessica Ellis

Chaves County Joy Center
Reappoint Tom Dunlap to represent Senior Citizens
Reappoint Judy Stubbs to represent the Community

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 18.**
Meeting Date: 09/08/2016
COMMITTEE: N/A
CONTACT: N/A **CHAIR:** N/A

ACTION REQUESTED:

Interim City Manager - Council consideration and vote to consider the Mayor's recommendation of James R. Hogan as Interim City Manager. (Sanchez/Mayor Kintigh)

BACKGROUND:

City Council is asked to consider the Mayor's recommendation of James R. Hogan as Interim City Manager.

FINANCIAL CONSIDERATION

Not applicable.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

Not applicable.

STAFF RECOMMENDATION:

Council consideration of the Mayor's recommendation of James R. Hogan as Interim City Manager.

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 19.**
Meeting Date: 09/08/2016
COMMITTEE: N/A
CONTACT: Sharon Coll **CHAIR:** N/A

ACTION REQUESTED:

Closed Session - Pursuant to NMSA 1978 § 10-15-1(H)(7), to discuss attorney-client privilege pertaining to threatened or pending litigation referencing the Chaves County Grand Jury which the City of Roswell is or may become a participant.(Sanchez/Mayor Kintigh)

BACKGROUND:

Pursuant to NMSA 1978 § 10-15-1(H)(7), to discuss attorney-client privilege pertaining to threatened or pending litigation referencing the Chaves County Grand Jury which the City of Roswell is or may become a participant.

FINANCIAL CONSIDERATION

Not applicable.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

Not applicable.

STAFF RECOMMENDATION:

Consider approval of a closed session Pursuant to NMSA 1978 § 10-15-1(H)(7), to discuss attorney-client privilege pertaining to threatened or pending litigation referencing the Chaves County Grand Jury which the City of Roswell is or may become a participant.

ROSWELL NEW MEXICO
AGENDA ITEM ABSTRACT

Regular City Council Meeting **Item No. 20.**
Meeting Date: 09/08/2016
COMMITTEE: N/A
CONTACT: Sharon Coll **CHAIR:** N/A

ACTION REQUESTED:

Department reports:

- GRT
- Roswell Public Library
- Code Enforcement
- Fire
- Convention Center
    - Activity Report
    - Expense Report
    - Maintenance Report
    - Visitors Bureau
- Lodgers Tax
- Convention Ctr Room Fee
- Parks and Recreation

BACKGROUND:

Not applicable.

FINANCIAL CONSIDERATION

Not applicable.

LEGAL REVIEW:

Not applicable.

BOARD AND COMMITTEE ACTION:

Not applicable.

STAFF RECOMMENDATION:

Not applicable.

Attachments

GRT
Roswell Public Library
Code Enforcement
Fire
Convention Center Activity
Convention Center Expense
Convention Center Maintenance
Convention Center Visitors Bureau
Lodgers Tax
Convention Ctr Room Fee
Parks and Rec

CITY OF ROSWELL
GROSS RECEIPTS TAX REPORT FY17
AUGUST 2016

THIS MONTH'S CHECK	LAST MONTH'S CHECK	THIS MONTH'S CHECK 1 YEAR AGO
$3,264,145.57	$2,401,205.20	$2,600,775.56

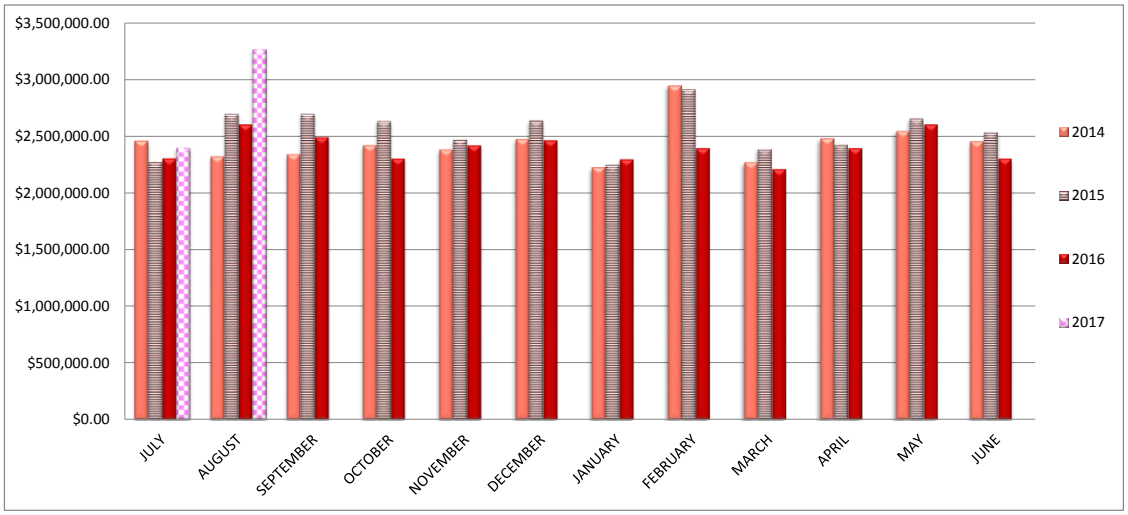
2016 FISCAL YEAR COLLECTIONS TO DATE	2017 FISCAL YEAR COLLECTIONS TO DATE
$4,903,608.76	$5,665,350.77

YEAR TO DATE	15.53%
LAST YEAR (AUGUST 2015)	25.51%
LAST MONTH (JULY 2016)	35.94%
BUDGETED DECREASE FOR FISCAL YEAR 2017	-7.34%
PERCENT VS BUDGETED AMOUNT	35.31%

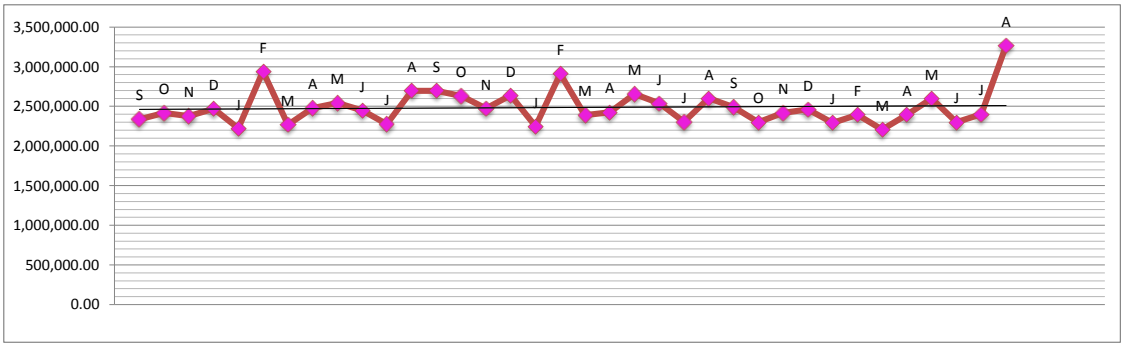
ACTUAL GROSS RECEIPTS TAX RECEIVED

	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017
JULY	$2,456,299.54	$2,276,972.79	$2,302,833.20	$2,401,205.20
AUGUST	2,317,234.25	2,695,926.14	2,600,775.56	3,264,145.57
SEPTEMBER	2,337,660.35	2,695,359.27	2,489,037.09	
OCTOBER	2,416,541.63	2,632,327.18	2,300,185.71	
NOVEMBER	2,377,565.87	2,473,024.72	2,416,633.33	
DECEMBER	2,470,059.94	2,637,083.83	2,461,769.31	
JANUARY	2,223,551.93	2,247,478.13	2,293,590.95	
FEBRUARY	2,941,276.82	2,911,146.44	2,391,951.90	
MARCH	2,266,645.09	2,387,102.40	2,208,221.49	
APRIL	2,476,673.68	2,425,986.73	2,392,960.96	
MAY	2,540,623.58	2,653,762.48	2,600,079.99	
JUNE	2,450,030.17	2,536,492.00	2,300,256.25	
TOTAL	$29,274,162.85	$30,572,662.11	$28,758,295.74	$5,665,350.77

COMPARISON OF ACTUAL RECEIPTS



GROSS RECEIPTS TAX - THREE YEAR TREND



August Report

Building

One of our security cameras overlooking the tree of knowledge came loose from the build and had to be reattached.

Advanced Airflow Technology services were in doing a balancing on our HVAC system to improve the performance.

The security system control box was replaced with a new one.

Personnel

Betty Long, Library Director, celebrated 31 years with the Library this Month and will be retiring at the end of August.

Debra Thomas, Head of Technical Services, celebrated 28 years with the Library this Month.

Robert Briggs, Circulations Supervisor, celebrated 13 years with the Library this Month.

Tomas Gonzalez, Periodicals/Inter Library Loan/Large Print Librarian, celebrated 9 years with the Library this Month.

Erin Riley, Cataloger, celebrated 9 years with the Library this Month.

Matthew Gormley, Adult Services Librarian was appointed to be the Interim Library Director.

Training

Debra Tomas, Robert Briggs and Kay Carrasco attended a Management Style & Techniques training class on August 15.

Classes, Tours, School Visits, Outreach

August 2 we hosted a National Coloring Book Day event.

August 16 we had an all age's Brick by Brick program.

August 23 we hosted another Pokémon Go event.

CITY OF ROSWELL
CODE ENFORCEMENT DEPARTMENT
Month: August 2016

CODE ENFORCEMENT	This Month	This Month 2015	YTD*	2015 YTD*
Notices Mailed	612	733	1,329	1,361
Voluntary Compliance	347	526	719	889
No. of Cases Filed	16	44	41	59
No. Cases Dismissed	2	1	5	1
Resolution	65	64	130	177
Cleaned by City	31	53	67	112
Weeds	362	438	809	863
Inoperable Vehicles	43	30	87	49
Litter	67	47	143	88
Unsanitary Premises	57	56	146	87
Signs	0	60	15	100
Zoning	3	6	5	7
Obstructions	33	13	47	22
Public Nuisances	23	29	52	46
Garage Sales No permit	0	40	0	85

BUSINESS LICENSES	This Month	This Month 2015	YTD*	2015 YTD*
Total Licenses Issued	129	119	367	240
Renewed Licenses	94	71	283	150
New Licenses	27	34	51	60
Temporary Permits Issued	8	14	33	30
Receipts	$4,902	$4,560	$13,659	$9,738

*Figures calculated to reflect FYTD

BUILDING INSPECTIONS	This Month	This Month 2015	YTD*	2015 YTD*
New Construction	9	8	15	12
All Other Construction	73	58	125	99
Total Permits Issued	82	66	140	111
Total Active Permits	468	426	***	***
Current Valuation	$3,620,605	$3,091,194	$7,636,707	$7,899,851
Total Fees Collected	$32,177	$29,181	$62,498	$53,460

PLUMBING INSPECTIONS	This Month		This Month 2015		YTD*		2015 YTD*	
Plumbing & Gas Permits--New	37	$1,849.50	20	$1,984	45	$2,511.50	28	$2,490
Plumbing & Gas Permits—Misc.	35	$1,526.25	40	$2,027.25	75	$3,566.75	74	$3,539.25
Gas Line Inspections	19	$581.35	23	$772.75	28	$865.35	47	$1,624
Totals	91	$3,957.10	83	$4,784	148	$6,943.60	149	$7,653.25

ELECTRICAL INSPECTIONS	This Month		This Month 2015		YTD*		2015 YTD*	
Electric Permits--New	165	$1,050	7	$805	168	$1,455	12	$1,860
Electric Permits—Misc.	41	$2,515	38	$2,255	64	$3,897	186	$7,980
Service Change	8	$330	16	$565	17	$645	28	$1,100
Totals	214	$3,915	61	$3,625	249	$6,017	226	$10,940

*Figures calculated to reflect FYTD

Signed: _____

C: CE monthly August 2016.docx

City of Roswell Fire Department
Chief's Report

To: City Council

From Chief Devin Graham

Date August 31, 2016

Ref: Department Report – January 1 to August 31 - 2016

Total Calls for Service – 5,826

Emergency Medical Services Division – **Total Activities - 5202**
CARDIAC ARRESTS – **39**
Cardiac Arrest Saves – **8**

Fire Services – **Total Activities 624**

Structure Fires – 32
Vehicle Fires – 17
Dumpster – 25
Other – 219
False Alarms – 233
Grass Fires – 67
EOD – 1
Fire Related Rescues - 1
Aircraft Fires - 1
Natural Gas/Propane Leaks - 28

Fire Marshal's Division

General Inspections - 849
Fire Investigations – 43
Plans Reviews – 17
Public Fire Extinguisher Training Classes – 10

Fire Prevention participated in the Roswell Library Summer Reading Program, first for fire safety in the home and then a second day to assist the U.S. Forestry Service with the Wildland Fire Day.

TRAINING DIVISION

Training Hours 2016 – 7900

STAFFING AND RECRUITING

8 Current Shift Vacancies
Recruit Academy began on July 8th, 2016 with six new firefighter recruits.
One recruit immediately resigned leaving us with five in the academy.
Placed one recruit immediately on shift as he was a certified firefighter and EMT-Basic.
We are currently accepting applications to fill current and future openings.

Activity Report - Roswell Convention & Civic Center for August 2016

*Set-up/Tear Down days included in this number

Date	Event	Description	* Event Days	Portion of Facility Rented Out	Approx. Attendees	Monthly Revenue	Y-T-D Revenue
8/5-7/2016	Gun Show	Trade Show	3	Whole Facility	1,350	$1,470.00	$3,933.75
8/11-12/2016	Farm Credit of NM	Banquet/Dance	2	Ex. Hall/N.Lopez/R.Goddard	250	$716.25	$5,403.75
8/13/2016	Tarin 50th Anniversary	Banquet	1	Exhibit Hall	150	$500.00	$6,120.00
8/15/2016	Safety Training	Class	1	Nancy Lopez	40	$0.00	$6,620.00
8/16/2016	United Way Annual KickOff	Banquet	1	Exhibit Hall	300	$250.00	$6,620.00
8/18-21/2016	11th Annual Dart Tournament	Tournament	4	Whole Facility	725	$876.26	$6,870.00
8/25-26/2016	Job Corps Graduation	Graduation	2	Whole Facility	275	$425.00	$7,746.26
8/30/2016	Heritage Dinner	Banquet	1	Exhibit Hall	400	$250.00	$8,171.26
8/31/2016	BLM Auction	Auction	1	Whole Facility	100	$100.00	$8,421.26
8/31/2016	Support Oil & Gas in NM	Rally	1	Parking Lot / Lobby	500	$120.00	$8,521.26
8/25/2016	New Employee Orientation	Class	1	Nancy Lopez	15	$0.00	$8,641.26
8/28/2016	Tobosa Training	Class	1	Nancy Lopez	20	$75.00	$8,641.26
		Total	**19**	**Total**	**4,125**	**Total $4,782.51**	**Total $8,716.26**
		Aug-15	14		2,410	*$4,526.24	
		Difference	5		1,715	$256.27	
		Percentage	36%		71%	6%	
		Waived Fees					

*Difference due to deposits being included in 2015 revenue.

Comments:

- Gun Show- Event holder said that everything went great and they really had a good turn out.
- Farm Credit of NM- Event holder said she was very happy with the way everything went and appreciated all our help.
- Tarin 50th Anniversary - Event holder was pleased with the set up and staff. They said that they had a great time and thanked us for everything.
- United Way Annual Kick Off- The event holder said everything was perfect, the staff was great & a lot of help. Everyone seemed to enjoy themselves.
- 11th Annual Dart Tournament- Event holder said the tournament was fantastic, everything went great and the facility staff was outstanding!
- Tabosa Training Event holder said every thing went good very pleased.

Roswell Convention & Civic Center

MONTHLY EXPENSE REPORT

AUGUST, 2016

CURRENT				
Date	**Vendor**	**Item**	**PO**	**Amount**
8/3/2016	Cintas	Service	170463	$62.58
8/4/2016	UniFirst	Service	Open	$73.51
8/5/2016	Rhoads Co.	HVAC Compressor	164549	$3,615.95
8/8/2016	Louie's	Weedeater Repair	170534	$190.49
8/8/2016	Office Depot	Computer Mouse	A89264	$42.49
8/8/2016	Carpet Clinic	Carpet Cleaining	170548	$860.00
8/10/2016	Tow Way	UHF Radios	Card	$328.90
8/11/2016	UniFirst	Service	Open	$30.28
8/23/2016	Cintas	Service	170736	$27.60
8/25/2016	UniFirst	Service	Open	$30.28
8/26/2016	Polar Refrigeration LLC	Prep Table Repair	170783	$159.84
			Current Total:	**$5,421.92**

Pending				
Date	**Vendor**	**Item**	**PO**	**Amount**
			Pending:	**$0.00**

Roswell Convention & Civic Center

GOALS/ACTIVITY AND MONTHLY MAINTENANCE REPORT
AUGUST, 2016

Facilities Maintenance

Due to the number and type of events held this month we had to do an extensive stain removal and carpet cleaning one month ahead of schedule. Maintenance Staff changed the filters on all the HVAC units at the center on June 26th. The Filters are changed out every 4 to 6 months to keep all the units running efficiently. The carpets in the Exhibit Hall were shampooed and scotch guarded on May 23rd. The Restrooms in the entire facility were sanitized and chemical washed on the 31st of May. The kitchen floor tile and appliances were sanitizer and chemical washed on June 13th. All the water purification filters for the kitchen and concession stand were replaced on August 22nd. Staff constantly stays busy with the events, maintenance, cleaning, and repairs needed at the Center.

Exterior Repair and Maintenance

Staff worked on power washing the walls and sidewalks on the entire west side of the facility. Orlando from Facilities Maintenance started painting the (exterior) east side of the building on June 21st and will continue to paint in between events. Orlando will also get a paint match of the existing color. Facilities Maintenance is also working on texture repairs in the lobby and bathrooms on the west side of the building.

Floors and Carpet

The tile and grout in all the entry ways and lobby were chemically washed and cleaned on June the 9th. The Exhibit Hall carpets were shampooed and scotch guarded on May the 23rd. The kitchen floor tiles were sanitized and washed on June 13th. The carpets in the Classrooms, East Hall Way and Front Offices were shampooed and scotch guarded on June 13th. Due to all the wear and tear during the year this is done once a year to keep a nice clean appearance. The cleaning, washing and sanitizing of the tile floors in the center are scheduled on a quarterly basis. Staff keeps up with the spot cleaning as well as stain removal of the tile and carpets in the entire facility before and after events.

Restrooms

The tile floors in all the rest rooms were chemically washed and cleaned on June 20th. Staff and Facilities Maintenance are staying on top of the drains in the Concession Stand and the sewer lines in the ladies restroom on the west side of the lobby. Hoping to eliminate the odor we have been dealing with on the north side of the lobby on windy days.

Fire Alarm System

Old Guard LLC preformed their quarterly test on June 29th with no problems. Inspection and testing of the fire alarm system has per NFPA and the Office of the Fire Marshal. Testing is done on a quarterly basis and the next test is scheduled for October.

GOALS /ACTIVITY AND MONTHLY MAINTENANCE REPORT
AUGUST, 2016

Visitors Center
For the month of August, the Visitors Center distribute goody bags to those that were interested. We have handed out the Tourism Council Points of Interest Maps to the hotels as well as visitors coming in to the Visitors Center. We continue to promote the all the events and festivities in Roswell on the Portales radio station on Thursdays. The Roswell Visitors Center website continues to be updated with all the upcoming events. We are updating our Facebook and Marquee every day to bring more attention to the events in town. The Visitors Center continues to send out Roswell Visitors Guide Brochures to different cities in New Mexico as well as other States.

Staff
The Events Receptionists Staff continues to give tours of the facility to new and potential event holders. The event receptionists often assist in giving rental information to those inquiring by phone. They prepare additional rental packets as we have recently had an influx of request for this information. The Event Services Director updated the Civic Centers Facebook to inform the public of upcoming events. Staff continues to work on and update the Civic Center portion of the new city website. The event receptionist continue to work on event files for the months of September, October and November. During the month of August, 2016 the Convention and Civic Center accommodated a total of 19 events days. Some of the events this month were the Gun Show, Farm Credit of NM Appreciation, United Way Annual Kick- Off, 11th Annual Alien Open Dart Tournament, and the Job Corps Graduation. The events held this month had an estimated attendance of 4,170 guests.

Grounds Maintenance
Convention Center Staff continues to maintain the lawns and parking lot for the Convention Center and Museum along with cleaning under and around all the shrubs and in the parking lot and picking up trash in the spring river on the west side and next to the museum. Staff also maintains the Spring River between the Convention Center and the Museum cleaning and removing weeds and trash. Staff had to replace and rewire the valve box located on the north Lawn of the facility which is used to water the Oasis Planter.

Museum Ground Maintenance
The Convention Center Staff continues to maintain the lawn at Museum. Replaced sprinkler heads and values in preparations for the upcoming growing season. Staff has also been working on the flower beds and plants on the south side of the Museum as time allows.

CITY OF ROSWELL
CONVENTION CENTER ROOM FEE - FY17
AUGUST 2016

FY17 THIS MONTH'S REVENUE & ROOM TOTALS	FY16 LAST MONTH'S REVENUE & ROOM TOTALS	FY17 THIS MONTH'S REVENUE & ROOM 1 YEAR AGO / TOTALS
$57,517.50	$53,337.50	$62,432.50
23,007	21,335	24973

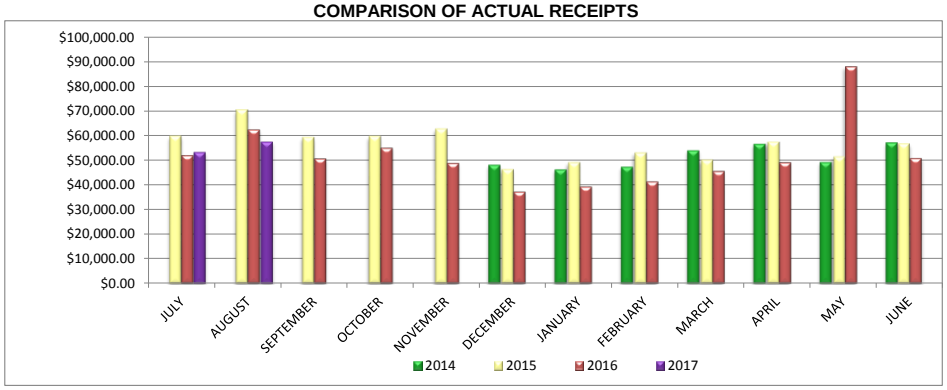
2016 FISCAL YEAR COLLECTIONS TO DATE	ESTIMATED PENDING FY16 & FY17 COLLECTIONS	2017 FISCAL YEAR COLLECTIONS TO DATE
$114,497.50	$17,212.50	$110,855.00

YEAR TO DATE	-3.18%
LAST YEAR (AUGUST 2015)	-7.87%
LAST MONTH (JULY 2016)	7.84%
BUDGETED DIFFERENCE FROM FISCAL YEAR 2016 ACTUAL	-5.39%

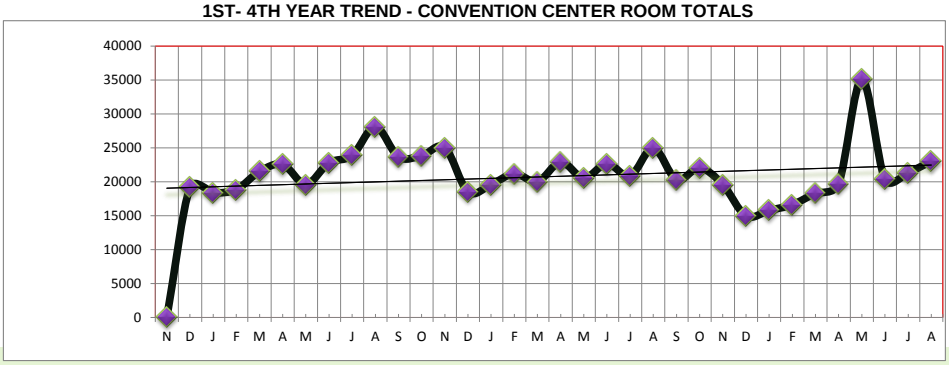
ACTUAL CONVENTION CENTER FEES RECEIVED

	Rooms FY14	Fiscal 2014	Rooms FY15	Fiscal 2015	Rooms FY16	Fiscal 2016	Rooms FY17	Fiscal 2017
JULY		$0.00	23,846	$59,614.50	20,826	$52,065.00	21,335	$53,337.50
AUGUST		0.00	28,087	70,219.00	24,973	62,432.50	23,007	57,517.50
SEPTEMBER		0.00	23,650	59,124.00	20,285	50,712.50		
OCTOBER		0.00	23,817	59,542.50	22,020	55,050.00		
NOVEMBER		0.00	25,024	62,560.00	19,578	48,945.00		
DECEMBER	19156	47,890.00	18,502	46,230.00	14,957	37,392.50		
JANUARY	18390	45,975.00	19,587	48,992.50	15,765	39,412.50		
FEBRUARY	18842	47,105.00	21,171	52,927.50	16,609	41,522.50		
MARCH	21489	53,722.50	20,003	50,007.50	18,290	45,725.00		
APRIL	22540	56,350.00	22,885	57,212.50	19,700	49,250.00		
MAY	19610	49,025.00	20,539	51,347.50	35,123	87,807.50		
JUNE	22784	56,960.00	22,643	56,607.50	20,350	50,874.50		
		$357,027.50		$674,385.00		$621,189.50		$110,855.00
		FY 2014 ROOM TOTAL		FY 2015 ROOM TOTAL		FY 2016 ROOM TOTAL		FY 2017 ROOM TOTAL
		142811		269754		248476		44342

COMPARISON OF ACTUAL RECEIPTS



1ST- 4TH YEAR TREND - CONVENTION CENTER ROOM TOTALS



Penalties Collected in FY 2017 $0.00 are not included in the above totals

JULY 2016'S EVENTS: Roswell Sertoma Club's Mike Satterfield 4th of July Fireworks Estravaganza, Kumbia King All Starz Concert, Roswell Invaders Baseball Games, RAC Saturday Night Dance, Earth Camp-Spring River Zoo, Saturday Night Free Movies @ the Zoo, **UFO Festival: Alien Chase, Pet & Human Costume Contest, NM Senior Olympics, Roswell UFO Festival 2016 6/30/16-7/4/16, 2016 Film Fest & Cosmicon (RFC) (part 2), Roswell Kick It 3v3 Soccer Tournament, NM Senior Olympics State Games, 2016 Bottomless Triathlon, Rotary Desert Sun Golf Pro-Am Classic, Roswell Road Race Series-Alien Chase.**

EVENTS PAID IN PART BY LODGERS' TAX INDICATED IN BLUE, CONVENTION CENTER EVENTS IN GREEN

CITY OF ROSWELL
LODGERS' TAX REPORT - FY 17
AUGUST 2016

THIS MONTH'S TAXES RECEIVED	LAST MONTH'S TAXES RECEIVED	THIS MONTH'S TAXES RECEIVED 1 YEAR AGO
$104,338.88	$93,693.68	$110,450.95

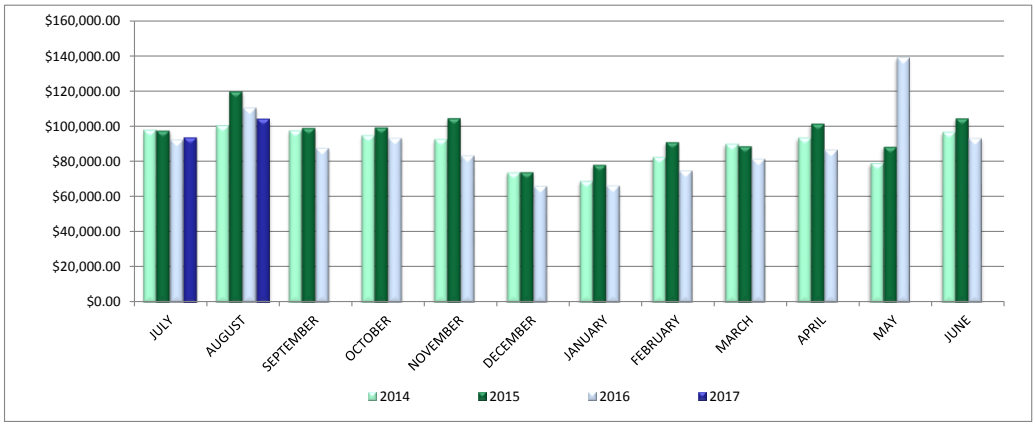
2016 FISCAL YEAR COLLECTIONS TO DATE	ESTIMATED PENDING FY16 & FY17 COLLECTIONS	2017 FISCAL YEAR COLLECTIONS TO DATE
$202,694.38	$26,352.90	$198,032.56

YEAR TO DATE	-2.30%
LAST YEAR (AUGUST 2015)	-5.53%
LAST MONTH (JULY 2016)	11.36%
BUDGETED DIFFERENCE FROM FISCAL YEAR 2016 ACTUAL	-5.32%

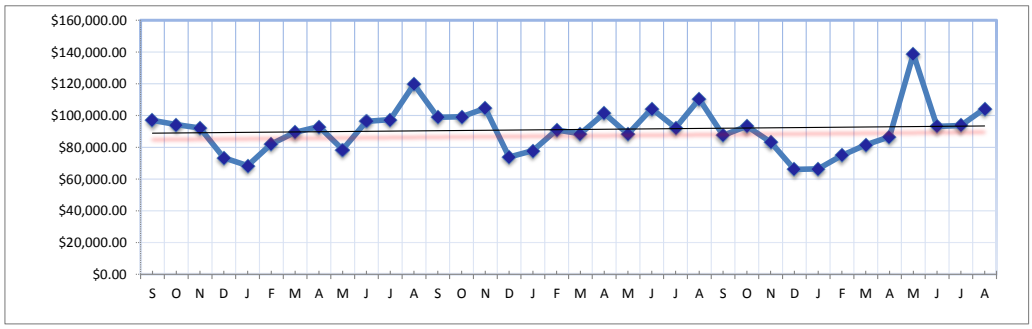
ACTUAL LODGERS' TAX RECEIVED

	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017
JULY	$97,457.04	$97,411.08	$92,243.43	$93,693.68
AUGUST	99,919.54	119,690.78	110,450.95	104,338.88
SEPTEMBER	97,009.21	98,916.48	87,548.09	
OCTOBER	94,330.06	99,236.39	93,266.12	
NOVEMBER	92,167.32	104,505.66	83,360.96	
DECEMBER	73,349.46	73,815.42	66,075.55	
JANUARY	68,455.83	77,958.32	66,389.60	
FEBRUARY	82,128.65	90,900.30	74,869.10	
MARCH	89,411.65	88,540.91	81,500.76	
APRIL	93,015.35	101,407.00	86,566.72	
MAY	78,592.18	88,272.53	138,810.45	
JUNE	96,268.38	104,358.62	93,103.46	
	$1,062,104.67	$1,145,013.49	$1,074,185.19	$198,032.56

COMPARISON OF ACTUAL RECEIPTS



LODGERS' TAX - THREE YEAR TREND



Penalties & Interest Collected NOT included in above Totals as of FY17 $0.00

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CITY OF ROSWELL
CONVENTION CENTER ROOM FEE - FY17
AUGUST 2016

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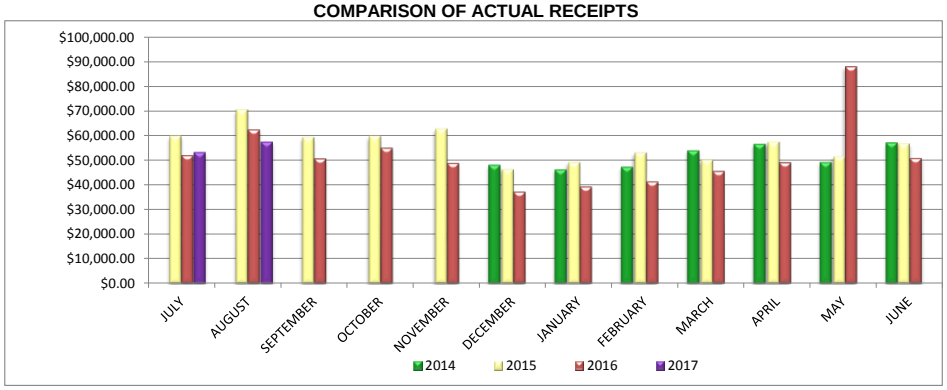
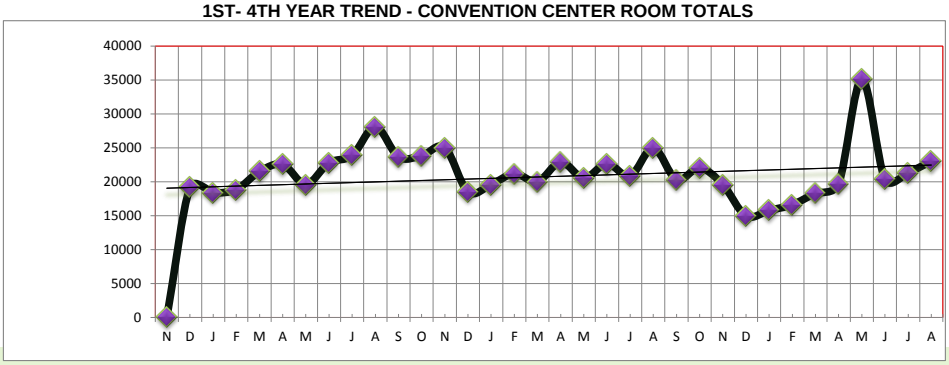


1ST- 4TH YEAR TREND - CONVENTION CENTER ROOM TOTALS



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EVENTS PAID IN PART BY LODGERS' TAX INDICATED IN BLUE, CONVENTION CENTER EVENTS IN GREEN

PARKS & RECREATION DEPARTMENT
August 2016

PARKS

Total department acreage	627.2
Parks-acres in inventory	486.2
Recreation Trails	11.2 miles
Full time Employees	16
Temporaries/FTE	4/2

Overview of 2015/2016 Major Parks Projects

Spring River Park & Zoo
- Refilled around mature tree roots
- Replaced railroad ties
- Landscaping throughout the Park & Zoo
- New wooden fencing
- New French drain and sewer lines
- Laid concrete and gravel in staff parking area
- Painted retention wall
- New benches and trash cans
- Replaced train engine, new brakes, added a car, other cosmetic work
- Fixed main water line break
- Pruned trees, removed dead/diseased trees

Nancy Lopez Golf Course @ Spring River
- Recreation staff repainted the Pro Shop
- Installed new flooring in the Pro Shop
- Landscaping work
- Installed a new sign

Other Projects
- Tennis Court resurfacing
- Installation of the shade awnings over the bleachers at the Girls' Softball Complex

Installed New Signs
- Spring River Park & Zoo
- Altrusa Park
- Delta West Park
- Poe Corn Park
- Carpenter Park
- Enchanted Lands Park
- Nancy Lopez Golf Course @ Spring River

Cielo Grande Competition Fields
- Renovated the turf at Cielo Grande Competition Fields
- Trimmed and raised the tree canopies at Cielo Grande and along College & Montana for improved line of sight and safety.
- Evaluated water pressures and timing, repaired irrigation system

Skate Park
- Replaced security lights
- Installed and welded in permanent trash cans
- Installed small bleachers
- Installed a picnic table
- Laid a concrete pad for a porta-potty
- Sealed cracks and seams
- Raised the tree canopies and mulched

Enchanted Lands Park
- Planted new trees

- Installed a new park sign
- Installed new disc golf signage

Eastside Little League
- Installed a new scoreboard
- New backstops
- Refurbished the concession stand and put on a new roof

Russ DeKay Field
- Filled holes
- Trimmed trees
- Spread pea gravel
- Aerated and fertilized the turf
- Repaired irrigation lines
- Cleaned up and hauled away debris
- Evaluated and repaired irrigation

Stiles Field
- Painted new stripes
- Removed goat heads

Cahoon Park
- Replaced pumps in the pond at the Sunken Garden
- Replaced 16 valves and repaired irrigation lines
- Repainted the curbing in and around the Park for visibility and safety

Miscellaneous Projects
- Cleared trees overhanging the railroad tracks at RIAC
- Weed and debris cleanup along the relief route
- South Main/Commuter Trail clean-up
- South Main Median at Albuquerque & Bland median clean up; trimmed trees to improve line of sight and safety
- Removed a dead and dangerous tree at Working Mothers' Day Nursery
- Installed hand rails at Roswell Adult Center
- Clean up of North Main Median in front of the Roswell Museum and Art Center
- West Alameda median around Lea Street; removed trees and bushes, then renovated the irrigation, planted live oak trees, and added new mulch.
- East Second Street cleanup; removed bushes, debris and added in new mulch and landscaping
- Filled in low-lying areas at the Woof Bowl Dog Park
- Southeastern New Mexico Museum Archive Building; dead tree removals, trenching, and updated the irrigation.
- Repaired irrigation at the Civic Center
- Evaluating and repairing irrigation systems at Noon Optimist and the Men's Softball Complex
- Trenched and installed new irrigation at the Esplanade. Preparing to plant over 100 trees there this fall.
- Replaced the bubbler in the Kenneth Smith Bird Sanctuary pond
- Over 40 dead and diseased trees removed from all over the City and planted over 60 new trees!

Parks Crews Receive Training/Certifications
- Parks crews attended Pesticide Applicator Education classes and received/renewed their licenses
- Tree Felling demonstration and training
- Two staff members took and passed the Playground Safety Inspector Test and are now Certified Playground Safety Inspectors
- Many staff attended the New Mexico State Parks and Recreation Association Conference in Farmington, NM where our department received multiple awards

Future Projects

- Planting over 100 trees at the Esplanade
- Installing new playground equipment in several parks
- Continue to evaluate and repair irrigation systems throughout all parks
- New signage for Cahoon Park
- New trail signage for Cielo Grande and Martin Luther King Park
- New concrete pad at General Douglas McBride Veterans Cemetery

Submitted by **Jim Burress**
Parks and Grounds Manager

Approved by **Tim Williams**
Parks and Recreation Director

SOUTH PARK CEMETERY

Number of casket burials	16
Number of cremation burials	7
Veteran's Cemetery casket burials	2
Veteran's Cemetery cremation burials	3
Acres in inventory	210
Full-time employees (FTE) equivalent	7
Total Revenue for August 2016	$31,890

Maintenance

- Dug, set-up, covered and tamped for 28 services during the month.
- Mowing of entire Cemetery (all 70 blocks).
- Repair and adjustment of sprinklers on the South Side of the cemetery.
- Put together replacement lowering device sent from manufacturer.
- Light application of fertilizer 16-8-8 throughout cemetery.
- Serviced 2 of the older lowering devices (15-20 years old).

Specifics

- Conducted a total of 28 services for the month of August

Submitted by **Ruben Esquevel**
South Park Cemetery Supervisor
Daisy Diaz
Administrative Assistant

Approved by **Tim Williams**
Parks and Recreation Director

NANCY LOPEZ GOLF COURSE AT SPRING RIVER

Total Department Acreage	144
Trees	2200
Full Time Employees (FTE) equivalent	6
Temporaries/Full Time Equivalent	2.5
Total Revenue for August 2016	TBD

Maintenance

- The bad area on 5 green was repaired with new sod approximately 25 square feet.

Program/Events

- The **WILDCAT OILFIELD OPEN** was held on the 26th and 27th with 165 participants. The golf course was in excellent condition and the participants were pleased with the golf course.

	Fiscal 2014		Fiscal 2015		Fiscal 2016		Fiscal

							2017
Jul-13	$ 38,599.57	Jul-14	$ 35,771.17	Jul-15	$27,319.31	Jul-16	27,912.34
Aug-13	$ 38,663.39	Aug-14	$ 32,397.36	Aug-15	$30,121.17	Aug-16	TBD
Sep-13	$ 27,130.34	Sep-14	$ 29,156.11	Sep-15	$23,038.93	Sep-16	
Oct-13	$ 26,798.86	Oct-14	$ 21,767.51	Oct-15	$19,887.05	Oct-16	
Nov-13	$ 18,958.67	Nov-14	$ 17,478.31	Nov-15	$ 9,154.14	Nov-16	
Dec-13	$ 16,326.58	Dec-14	$ 14,889.77	Dec-15	$11,937.33	Dec-16	
Jan-14	$ 14,997.19	Jan-15	$ 10,783.17	Jan-16	$ 7,497.84	Jan-17	
Feb-14	$ 23,466.23	Feb-15	$ 19,359.64	Feb-16	$27,701.36	Feb-17	
Mar-14	$ 31,675.38	Mar-15	$ 29,775.47	Mar-16	$26,368.65	Mar-17	
Apr-14	$ 29,449.28	Apr-15	$ 31,859.04	Apr-16	$29,456.44	Apr-17	
May-14	$ 41,017.27	May-15	$ 46,982.97	May-16	$35,046.29	May-17	
Jun-14	$ 33,480.25	Jun-15	$ 35,759.57	Jun-16	$29,013.64	June-17	
	$340,563.01		$325,980.09		$276,542.15		

Submitted by **David Blewitt**
Golf Course Superintendent
Carlton Blewitt
Golf Course Professional

Approved by **Tim Williams**
Parks and Recreation Director

SPRING RIVER PARK & ZOO

Number of Animal Specimens	295
Number of Animal Species	65

Specifics

- We purchased two bottle baby Coati (South American relative of the raccoon) that will be located in the zoo when they are old enough. They are quite active and going to educational talks while they are still young and manageable.
- Prepping a new exhibit area for the baby coatis
- New exhibit baby badger is doing very well.

Maintenance

- Working with Engineering on new bear enclosure designs
- Quotes to replace a large portion of old water line.

Program/Events

- Preparing for Labor Day Symphony Concert
- Moving forward with construction and planning for Christmas Train and Holiday Express event

Submitted by **Jim Burress**
Parks and Grounds Manager

Approved by **Tim Williams**
Parks and Recreation Director

RECREATION

Roswell Adult Center estimated attendance	15,876
Special Programs/Co Sponsorships estimated attendance	4,675
Yucca Recreation Programming estimated attendance	339

Revenues

Yucca

Vacation Fun	$217
Volleyball	3,500
Youth Fees	5,432

Roswell Adult Center

Concession	$77
Classes	4,495
Rentals	897
Admission	5,469

Specifics

- Youth Volleyball registration is completed and games will be played at Calvary Baptist Church
- Tennis will have a free clinic in September and the Turtle Marathon is this weekend. Bob Edwards Race Director, will be retiring after this race.
- Roswell Adult Center Class registrations are going well. All registrations are now done online with BookKing Registration software and the public is enjoying using the new City website for information regarding Parks & Recreation.
- Movies in the Park are winding down. This month we also held National Night Out, the American Fly In at RIAC, BLM, Golf Tourney, Pence Rally, and SENM Historical Society Heritage Dinner.

Maintenance

- Calls made into facility maintenance for various small repairs. Fixed fans in Room #4 and patched the driveway.
- A single custodian has been cleaning the Recreation Center, Zoo office, Parks Maintenance shop, Parks and Recreation Administration office, the Golf Course Pro Shop, and the Cemetery office.
- Repairs called in on the mobile stage.

Program/Events

- Youth Basketball League registration will be starting in September. Several new tournaments and programs are on the horizon.
- Registration is underway for the RYFL football/cheer and soccer.
- Roswell Adult & Senior Center will continue to schedule dances, rentals and prepare for upcoming Lifelong Scholars Program to include several new youth classes.
- Assisting with the Dragonfly Festival.
- Planning underway for PinataFest and Chili Cheese Festival

Submitted by **Laurie Jerge**
Recreation Superintendent

Approved by **Tim Williams**
Parks and Recreation Director